

10/502,032

## EAST Search History

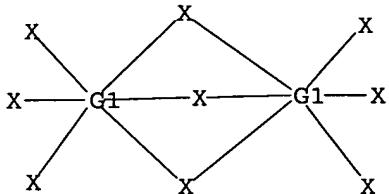
Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	536	(556/12).CCLS.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/08/21 16:50
L2	588	(556/28).CCLS.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/08/21 16:56
L3	2060	(502/152).CCLS.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/08/21 17:14
L4	2413	(526/160).CCLS.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/08/21 17:14

10/502,073

(FILE 'HOME' ENTERED AT 11:14:08 ON 21 AUG 2006)

FILE 'REGISTRY' ENTERED AT 11:14:22 ON 21 AUG 2006  
L1 STRUCTURE uploaded

=> d 11  
L1 HAS NO ANSWERS  
L1 STR



G1 Hf,Zr

Structure attributes must be viewed using STN Express query preparation.

=> s 11  
SAMPLE SEARCH INITIATED 11:14:55 FILE 'REGISTRY'  
SAMPLE SCREEN SEARCH COMPLETED - 133 TO ITERATE

100.0% PROCESSED 133 ITERATIONS 1 ANSWERS  
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED ITERATIONS: 1969 TO 3351  
PROJECTED ANSWERS: 1 TO 80

L2 1 SEA SSS SAM L1

=> s 11 full  
FULL SEARCH INITIATED 11:15:00 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED - 3075 TO ITERATE

100.0% PROCESSED 3075 ITERATIONS 49 ANSWERS  
SEARCH TIME: 00.00.01

L3 49 SEA SSS FUL L1

=> fil caplus  
COST IN U.S. DOLLARS SINCE FILE TOTAL  
FULL ESTIMATED COST ENTRY SESSION  
166.94 167.15

FILE 'CAPLUS' ENTERED AT 11:15:05 ON 21 AUG 2006  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching

databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 21 Aug 2006 VOL 145 ISS 9  
FILE LAST UPDATED: 20 Aug 2006 (20060820/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply.  
They are available for your review at:

<http://www.cas.org/infopolicy.html>

=> s 13  
L4 41 L3

=> d 1-41 bib abs

L4 ANSWER 1 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2006:334107 CAPLUS  
DN 145:90451  
TI Periodic trends in metal-metal interactions in face-shared [M2Cl9]z- systems  
AU Cavigliasso, German; Lovell, Timothy; Stranger, Robert  
CS Department of Chemistry, Faculty of Science, Australian National University, Canberra, 0200, Australia  
SO Dalton Transactions (2006), (16), 2017-2025  
CODEN: DTARAF; ISSN: 1477-9226  
PB Royal Society of Chemistry  
DT Journal  
LA English  
AB The periodic trends in metal-metal interactions in even-electron and mixed-valence [M2Cl9]z- face-shared systems, involving transition metals in Groups 4 to 8 and electronic configurations ranging from d1d1 through to d5d5 and from d1d2 through to d4d5, have been investigated by calculating metal-metal bonding and spin polarization (exchange) effects using d. functional theory. These two terms are in opposition to one another and their relative difference dets. the extent to which the metal-based electrons are delocalized and thus the degree of metal-metal bonding. Remarkably strong linear correlations between the two terms, and between each term and the square of the spin d. on the metal centers, have been obtained for all group and period series considered, and are discussed in terms of their dependence on the metal orbital properties and electron d.  
RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2005:500061 CAPLUS  
DN 143:451587  
TI Thermal behavior of ammonium-bearing zirconium and hafnium fluoro complexes with hydrofluoride  
AU Antokhina, T. F.; Savchenko, N. N.; Merkulova, E. B.; Kaidalova, T. A.; Polishchuk, S. A.  
CS Inst. Khim., DVO RAN, Vladivostok, Russia  
SO Zhurnal Neorganicheskoi Khimii (2005), 50(4), 707-709  
CODEN: ZNOKAQ; ISSN: 0044-457X  
PB MAIK Nauka/Interperiodica Publishing  
DT Journal  
LA Russian  
AB (NH4)4MA3F17.2HF (M = Li, Na; A = Zr, Hf) were studied by DTA and x-ray phase anal. At 120-230Å dehydrofluorination of (NH4)4MA3F17.2HF occurred, leading to decomposition and the formation of ammonium and sodium/lithium containing fluoro complexes.

L4 ANSWER 3 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:376673 CAPLUS  
DN 143:317823  
TI Chemical properties of (NH<sub>4</sub>)<sub>2</sub>SiF<sub>6</sub>  
AU Mel'nicenko, E. I.; Krysenko, G. F.; Epov, D. G.  
CS Inst. Khim., DVO RAN, Vladivostok, Russia  
SO Zhurnal Neorganicheskoi Khimii (2005), 50(2), 192-196  
CODEN: ZNOKAQ; ISSN: 0044-457X  
PB MAIK Nauka/Interperiodica Publishing  
DT Journal  
LA Russian  
AB The solid phase reaction of (NH<sub>4</sub>)<sub>2</sub>SiF<sub>6</sub> with SiO<sub>2</sub> led to the formation of SiF<sub>4</sub>, NH<sub>3</sub>, NH<sub>4</sub>SiF<sub>5</sub>, and H<sub>2</sub>O. The reaction with CaCO<sub>3</sub> and CaO led to the decomposition of SiF<sub>6</sub><sup>2-</sup> to SiO<sub>2</sub>. The solid phase reaction of (NH<sub>4</sub>)<sub>2</sub>SiF<sub>6</sub> with various metal fluorides led to the formation of  $\alpha$ -NH<sub>4</sub>ZrF<sub>5</sub> and NH<sub>4</sub>Zr<sub>2</sub>F<sub>9</sub> with ZrF<sub>4</sub> and (NH<sub>4</sub>)<sub>3</sub>AlF<sub>6</sub> which decomposed to NH<sub>4</sub>AlF<sub>4</sub> from AlF<sub>3</sub>.

L4 ANSWER 4 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2005:309278 CAPLUS  
DN 143:393338  
TI Quantum-chemical study of potassium and ammonium hexafluorozirconates  
AU Voit, E. I.; Voit, A. V.; Kavun, V. Ya.; Sergienko, V. I.  
CS Institute of Chemistry, Far East Branch, Russian Academy of Sciences, Vladivostok, Russia  
SO Journal of Structural Chemistry (2004), 45(4), 610-616  
CODEN: JSTCAM; ISSN: 0022-4766  
PB Springer Science+Business Media, Inc.  
DT Journal  
LA English  
AB A number of fluorozirconate clusters serving as structural models for K<sub>2</sub>ZrF<sub>6</sub> and (NH<sub>4</sub>)<sub>2</sub>ZrF<sub>6</sub> crystals were investigated by the Hartree-Fock ab initio method. Based on the results of quantum-chemical calcns. it is shown that the differences in the structure of these compds. and in the behavior of the temperature dependence of the second moment of the <sup>19</sup>F NMR spectra are due to differences in the binding between the cation and anion sublattices. A mechanism responsible for ionic mobility is suggested.

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2005:205155 CAPLUS  
DN 142:430407  
TI Reactivity of Silyl-Substituted Allyl Compounds with Group 4, 5, 9, and 10 Metals: Routes to  $\eta$ <sup>3</sup>-Allyls, Alkylidenes, and sec-Alkyl Carbocations  
AU Schormann, Mark; Garratt, Shaun; Bochmann, Manfred  
CS Wolfson Materials and Catalysis Centre, School of Chemical Sciences, University of East Anglia, Norwich, NR4 7TJ, UK  
SO Organometallics (2005), 24(7), 1718-1724  
CODEN: ORGND7; ISSN: 0276-7333  
PB American Chemical Society  
DT Journal  
LA English  
OS CASREACT 142:430407  
AB Whereas the reaction of alkali-metal salts of silyl-allyls E+[C<sub>3</sub>H<sub>3</sub>(SiMe<sub>3</sub>)<sub>2</sub>-1,3]- (E = Li, K) with Group 4 and Group 5 metal halides gave intractable reduction products, Co(acac)<sub>3</sub> and Ni(acac)<sub>2</sub> reacted with K[C<sub>3</sub>H<sub>3</sub>(SiMe<sub>3</sub>)<sub>2</sub>-1,3] to give Co{ $\eta$ <sup>3</sup>-C<sub>3</sub>H<sub>3</sub>(SiMe<sub>3</sub>)<sub>2</sub>-1,3}<sub>2</sub> (1) and Ni{ $\eta$ <sup>3</sup>-C<sub>3</sub>H<sub>3</sub>(SiMe<sub>3</sub>)<sub>2</sub>-1,3}<sub>2</sub> (2), resp. The reaction of K[C<sub>3</sub>H<sub>3</sub>(SiMe<sub>3</sub>)<sub>2</sub>-1,3] with Me<sub>3</sub>SnCl afforded Me<sub>3</sub>SiCH:CHCH(SiMe<sub>3</sub>)(SnMe<sub>3</sub>) (3), which reacted cleanly with TaCl<sub>5</sub> to give { $\eta$ <sup>3</sup>-C<sub>3</sub>H<sub>3</sub>(SiMe<sub>3</sub>)<sub>2</sub>-1,3}TaCl<sub>4</sub> (4). Treatment of this complex with tetramethylethylenediamine led to HCl abstraction, and the allyl complex was transformed into the vinyl-alkylidene compound Me<sub>3</sub>SiCH:CHC(SiMe<sub>3</sub>):TaCl<sub>3</sub>(TMEDA) (5). Whereas in the case of TaCl<sub>5</sub> dehalostannylation was facile, the reaction of 3 with ZrCl<sub>4</sub> and HfCl<sub>4</sub> took a different course, leading instead to the addition of

Me<sub>3</sub>Sn<sup>+</sup> to 3 to give [HC{CH(SiMe<sub>3</sub>)(SnMe<sub>3</sub>)}<sub>2</sub>]<sup>+</sup>[M<sub>2</sub>Cl<sub>9</sub>]<sup>-</sup> (6, M = Zr; 7, M = Hf), the first examples of isolable sec-alkyl carbocations. These salts are surprisingly thermally stable and melt >100 °C; this stability is largely due to delocalization of the pos. charge over the two tin atoms. The crystal structures of 1, 2, and 5-7 are reported.

RE.CNT 61 THERE ARE 61 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 6 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:591223 CAPLUS

DN 139:150077

TI Process for preparing isobutylene-based polymers

IN Bochmann, Manfred; Garratt, Shaun; Schormann, Mark

PA Bayer Inc., Can.

SO PCT Int. Appl., 26 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003062284	A2	20030731	WO 2003-CA67	20030121
	WO 2003062284	A3	20031002		
	WO 2003062284	C1	20031204		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	CA 2368724	AA	20030721	CA 2002-2368724	20020121
	EP 1470167	A2	20041027	EP 2003-700268	20030121
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	CN 1620470	A	20050525	CN 2003-802539	20030121
	JP 2005515276	T2	20050526	JP 2003-562161	20030121
	US 2005165182	A1	20050728	US 2003-502073	20030121
PRAI	CA 2002-2368724	A	20020121		
	WO 2003-CA67	W	20030121		
OS	MARPAT 139:150077				
AB	This invention relates to a metal organic compound, a catalytic composition comprising said metal organic compound, a process for homo- or co-polymerizing isoolefines in the presence of said metal organic compound and a method of stabilizing a compound of the general structure [R'HC(CRR') <sub>2</sub> ] <sub>2</sub> <sup>+</sup> [M <sub>2</sub> X <sub>9</sub> ] <sup>-</sup> , in which R = SiR <sub>1</sub> R <sub>2</sub> R <sub>3</sub> , R' = hydrogen, C <sub>1</sub> -12 alkyl, C <sub>6</sub> -14 aryl, or C <sub>7</sub> -20 alkylaryl, M = Zr or Hf, X = halogen, and R <sub>1</sub> -3 C <sub>1</sub> -12 alkyl group, with a compound R' = the formula M'R <sub>4</sub> R <sub>5</sub> R <sub>6</sub> , in which M' = Si, Ge, Sn, or Pb and R <sub>4</sub> -6 = C <sub>1</sub> -12 alkyl group as well as a non-coordinating anion of the general structure [M <sub>2</sub> X <sub>9</sub> ] <sup>-</sup> in which M = Zr or Hf and X = halogen atom.				

L4 ANSWER 7 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:42082 CAPLUS

DN 138:95272

TI Composition for oral hygiene comprising a fluoride ion vector and an antioxidant

IN Cazor, Jean-Louis; Lhuisset, Francois; Robineau, Pascale

PA Sanofi-Synthelabo, Fr.

SO PCT Int. Appl., 25 pp.

CODEN: PIXXD2

DT Patent

LA French

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003003995	A1	20030116	WO 2002-FR2313	20020703
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	FR 2826868	A1	20030110	FR 2001-8852	20010704
	EP 1408921	A1	20040421	EP 2002-782462	20020703
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, BE, SK				
	JP 2004535453	T2	20041125	JP 2003-510007	20020703
	US 2004258634	A1	20041223	US 2004-481718	20040722
PRAI	FR 2001-8852	A	20010704		
	WO 2002-FR2313	W	20020703		

AB The invention concerns a composition for oral hygiene adapted for diabetics. The inventive composition comprises at least a fluoride ion vector and at least an antioxidant and can in particular be in the form of a toothpaste, a chewing gum, a mouthwash, a spray. The invention also concerns the use of at least a fluoride ion vector and at least an antioxidant for preparing a composition for oral hygiene designed to prevent and/or fight against oral pathologies in diabetics.

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 8 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2002:655583 CAPLUS  
DN 137:337966  
TI Isolation and Structure of  $[\text{HC}(\text{CH}(\text{SiMe}_3)(\text{SnMe}_3)\text{}_2)]^+$ : A Remarkably Stable sec-Alkyl Cation  
AU Schormann, Mark; Garratt, Shaun; Hughes, David L.; Green, Jennifer C.; Bochmann, Manfred  
CS Wolfson Materials and Catalysis Centre, School of Chemical Sciences, University of East Anglia, Norwich, NR4 7TJ, UK  
SO Journal of the American Chemical Society (2002), 124(38), 11266-11267  
CODEN: JACSAT; ISSN: 0002-7863  
PB American Chemical Society  
DT Journal  
LA English  
OS CASREACT 137:337966  
AB The reaction of the tin-substituted propene  $\text{Me}_3\text{Sn}(\text{R})\text{CHCH:CHR}$  ( $\text{R} = \text{SiMe}_3$ ) with  $\text{MCl}_4$  in dichloromethane in the presence of  $\text{Me}_3\text{SnCl}$  gives the first examples of isolable sec-alkyl carbocation salts,  $[\text{HC}(\text{CH}(\text{R})\text{SnMe}_3)_2]^+ \text{M}^2\text{Cl}_9^-$  ( $\text{M} = \text{Zr, Hf}$ ). The compds. are thermally stable and, unlike previously isolated trialkyl carbocations, do not require superacidic media or weakly coordinating anions for stability. The crystal structure and DFT calcns. suggest polarization of the Sn substituents and hyperconjugation as the reason for the unexpected stability. The stabilizing effect of tin is significantly stronger than that of Si. The carbocations are effective initiators for the polymerization of isobutene, isoprene, and  $\alpha$ -methylstyrene.

RE.CNT 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 9 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:591718 CAPLUS  
DN 133:313907  
TI Quantum chemical study of model fluorozirconate clusters  
AU Voit, E. I.; Voit, A. V.; Gerasimenko, A. V.; Sergienko, V. I.  
CS Institute of Chemistry, Far East Branch, Russian Academy of Sciences,  
Vladivostok, Russia  
SO Journal of Structural Chemistry (Translation of Zhurnal Strukturnoi  
Khimii) (2000), 41(1), 41-47  
CODEN: JSTCAM; ISSN: 0022-4766  
PB Consultants Bureau  
DT Journal  
LA English  
AB Fluorozirconate clusters  $[Zr_mFn]$  ( $4m-n$ ) were investigated by the  
DV-X $\alpha$  quantum chemical method and the results were used to explain the  
existence of polyhedra with central-atom coordination nos. 6, 7, and 8 in  
crystalline fluorozirconates. The  $[ZrF_6]^{2-}$  octahedron and the dimer of  
edge-sharing seven-vertex polyhedra  $[Zr_2F_{12}]^{4-}$  are highly stable.  
RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 10 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2000:171560 CAPLUS  
DN 132:326211  
TI Coordination polyhedrons  $HfX_n$  ( $X$  = halogen) in the structures of  $Hf(IV)$   
compounds  
AU Serezhkina, L. B.; Serezhkin, V. N.; Davidovich, R. L.  
CS Samara State University, Samara, Russia  
SO Russian Journal of Coordination Chemistry (Translation of  
Koordinatsionnaya Khimiya) (2000), 26(1), 18-22  
CODEN: RJCCEY; ISSN: 1070-3284  
PB MAIK Nauka/Interperiodica Publishing  
DT Journal  
LA English  
AB The Voronoi-Dirichlet polyhedrons and the method of intersecting spheres  
were used to carry out crystallochem. anal. of all the structurally  
studied compds. containing coordination polyhedrons  $HfX_n$  ( $X$  = F, Cl, and I).  
The  $Hf(IV)$  coordination number (C.N.) is shown to be 6, 7, or 8 with respect  
to the F atoms and only 6 with respect to the Cl or I atoms. It is  
established that, although the  $Hf-X$  distances in  $HfX_n$  vary by more than  
0.3 Å, the volume of the Voronoi-Dirichlet polyhedron of the  $Hf(IV)$  atom  
virtually does not depend on the metal C.N. (for  $X$  = F) or on the degree  
of distortion of the  $HfX_6$  octahedron (for  $X$  = Cl and I).  
RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 11 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1999:722907 CAPLUS  
DN 131:327376  
TI Use of a fluoride ion vector for preparing a medicine for preventing or  
treating diseases associated with *Helicobacter pylori*  
IN Finidori, Claudine  
PA Sanofi-Synthelabo, Fr.  
SO PCT Int. Appl., 16 pp.  
CODEN: PIXXD2  
DT Patent  
LA French  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9956756	A1	19991111	WO 1999-FR920	19990420
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,				

TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ,  
 MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK,  
 ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG,  
 CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  
 FR 2778104 A1 19991105 FR 1998-5597 19980504  
 FR 2778104 B1 20020830  
 AU 9933364 A1 19991123 AU 1999-33364 19990420  
 EP 1075268 A1 20010214 EP 1999-914615 19990420  
 EP 1075268 B1 20050727

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO

AT 300307 E 20050815 AT 1999-914615 19990420  
 PRAI FR 1998-5597 A 19980504  
 WO 1999-FR920 W 19990420

AB The use of at least one pharmaceutically acceptable fluoride ion vector for preparing a medicine for prevention or adjuvant therapy treatment of a disease associated with Helicobacter pylori is disclosed. A dentifrice contained sodium fluoride 0.33, sodium monofluorophosphate 0.76, silica 21.00, carrageenan 11.00, titanium oxide 1.00, phosphates 0.30, sodium benzoate 4.00, sorbitol 25.00, preservatives 0.10, fragrances 1.06, and water q.s. 100.00%.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 12 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1998:756569 CAPLUS  
 DN 130:115327  
 TI Metal-Metal Bonding in d1d1 and d2d2 Biocatahedral Dimer Systems: A Density Functional Study of Face-Shared M2X93- (M = Ti, Zr, Hf, V, Nb, Ta) Complexes  
 AU Stranger, Robert; McGrady, John E.; Lovell, Timothy  
 CS Department of Chemistry, The Faculties, The Australian National University, Canberra, 0200, Australia  
 SO Inorganic Chemistry (1998), 37(26), 6795-6806  
 CODEN: INOCAJ; ISSN: 0020-1669  
 PB American Chemical Society  
 DT Journal  
 LA English  
 AB D. functional theory is used to investigate the electronic and geometric structures and periodic trends in metal-metal bonding of d1d1 and d2d2 face-shared M2X93- dimers of Ti, Zr, Hf (d1d1) and V, Nb, Ta (d2d2). For these systems three distinct coupling modes can be recognized, depending on the occupation of the trigonal t2g(a1 + e) single-ion orbitals, which determine the ground-state geometry and extent of metal-metal bonding. For Ti2Cl93-, the [a1 + a1] broken-symmetry optimized structure, corresponding to significant delocalization of the metal-based  $\sigma$  electrons, nicely rationalizes the strong antiferromagnetic coupling reported for Cs3Ti2Cl9. The ground-state geometries for Zr2Cl93- and Hf2Cl93- correspond to complete delocalization of the metal-based electrons in a metal-metal  $\sigma$  bond. For V2Cl93-, the global min. is found to be the ferromagnetic [a1e + e2] spin-quintet state giving rise to a long V-V separation, consistent with the known structure and reported weak ferromagnetic behavior of Cs3V2Cl9. For Nb2X93- (X = Cl, Br, I) and Ta2Cl93-, the [a1e + a1e] spin-triplet state, where complete delocalization of the  $\sigma$  and  $\delta\pi$  electrons occur in a metal-metal double bond, is found to be the global min. and consequently relatively short internuclear distances result, again, in good agreement with experiment. The periodic trends in metal-metal bonding in these and the isovalent d3d3 complexes can be rationalized in terms of the energetic contributions of orbital overlap ( $\Delta E_{\text{ovlp}}$ ) and spin polarization ( $\Delta E_{\text{spe}}$ ), the difference  $\Delta E_{\text{spe}} - \Delta E_{\text{ovlp}}$  determining the tendency of the metal-based electrons to delocalize in the dimer. For d1d1 systems,  $\Delta E_{\text{ovlp}}$  is always greater than  $\Delta E_{\text{spe}}$  and

therefore delocalized ground states result for all complexes of the titanium triad. Across the first transition series, the dramatic increase in  $\Delta E_{\text{spe}}$  dominates  $\Delta E_{\text{ovlp}}$  and therefore  $\text{V}_2\text{Cl}_9\text{3}^-$  and  $\text{Cr}_2\text{Cl}_9\text{3}^-$  have localized ground states. For the second and third transition series, the much larger  $\Delta E_{\text{ovlp}}$  term ensures that all these complexes remain delocalized.

RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 13 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1998:135171 CAPLUS  
DN 128:236521  
TI Vibrational modes and structure of liquid and gaseous zirconium tetrachloride and of molten  $\text{ZrCl}_4\text{-CsCl}$  mixtures  
AU Photiadis, G. M.; Papatheodorou, G. N.  
CS Department of Chemical Engineering, Institute of Chemical Engineering and High Temperature Chemical Processes--FORTH, University of Patras, Patras, GR-26500, Greece  
SO Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1998), (6), 981-990  
CODEN: JCDTBI; ISSN: 0300-9246  
PB Royal Society of Chemistry  
DT Journal  
LA English  
AB Raman spectra of liquid and gaseous  $\text{ZrCl}_4$  and of molten  $\text{ZrCl}_4\text{-CsCl}$  mixts. were measured. Changes of the relative Raman intensities in the vapor phase, near and above the critical point, established the dimerization reaction  $2\text{ZrCl}_4\text{(g)} \rightleftharpoons \text{Zr}_2\text{Cl}_8\text{(g)}$ ,  $\Delta H_{\text{R}} = -56.6 \pm 1.1 \text{ kJ mol}^{-1}$ . Spectra of solid and molten Zr chloride show that in the liquid phase  $\text{ZrCl}_4$  monomers are present in equilibrium with polymer-like  $(\text{ZrCl}_4)_n$  species. A systematic study of the Raman spectra of the solid mixts. formed upon cooling the  $\text{ZrCl}_4\text{-CsCl}$  melts at different compns. showed that apart from the known  $\text{Cs}_2\text{ZrCl}_6$  a new compound  $\text{CsZr}_2\text{Cl}_9$  is also formed. The spectra of solid and molten  $\text{Cs}_2\text{ZrCl}_6$  and  $\text{CsZr}_2\text{Cl}_9$  show that  $\text{ZrCl}_6^{2-}$  and the  $\text{Zr}_2\text{Cl}_9^-$  are present in both phases. In molten  $\text{ZrCl}_4\text{-CsCl}$  mixts. and at compns.  $x\text{ZrCl}_4 < 0.33$  the  $\text{ZrCl}_6^{2-}$  octahedra are predominant. In the range  $0.33 < x\text{ZrCl}_4 < 0.66$  the spectral changes with temperature and composition reflect an equilibrium involving 3 ionic species:  $\text{ZrCl}_6^{2-}$ ,  $\text{Zr}_2\text{Cl}_9^-$  and  $\text{Zr}_2\text{Cl}_{10}^{2-}$  (or  $\text{ZrCl}_5^-$ ). At mole fractions rich in  $\text{ZrCl}_4$  ( $x\text{ZrCl}_4 > 0.66$ ) the spectra indicate an equilibrium between the ionic  $\text{Zr}_2\text{Cl}_9^-$ , the  $\text{ZrCl}_4$  monomer and the  $(\text{ZrCl}_4)_n$  polymer-like species. All data suggest that the value of  $n$  is small and most probably hexamers and/or dimers are the predominant polymer species in these melts.

RE.CNT 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 14 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1998:74066 CAPLUS  
DN 128:115033  
TI Hydrocarbon Activation with Metal Halides: Zirconium Tetrachloride Catalyzing the Jacobsen Reaction and Assisting the Trimerization of Alkynes via the Formation of  $\eta^6$ -Arene-Zirconium(IV) Complexes.  
[Erratum to document cited in CA127:278262]  
AU Musso, Fabrizio; Solari, Euro; Floriani, Carlo; Schenk, Kurt; Chiesi-Villa, Angiola; Rizzoli, Corrado  
CS Institut de Chimie Minerale et Analytique BCH, Universite de Lausanne, Lausanne, CH-1015, Switz.  
SO Organometallics (1998), 17(2), 274  
CODEN: ORGND7; ISSN: 0276-7333  
PB American Chemical Society  
DT Journal  
LA English  
AB The authors Angiola Chiesi-Villa and Corrado Rizzoli were omitted. Kurt

Schenk is affiliated with the Universite de Lausanne; Angiola Chiesi-Villa and Corrado Rizzoli are affiliated with the Universita di Parma.

L4 ANSWER 15 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1997:648897 CAPLUS  
DN 127:278262  
TI Hydrocarbon Activation with Metal Halides: Zirconium Tetrachloride Catalyzing the Jacobsen Reaction and Assisting the Trimerization of Alkynes via the Formation of  $\eta^6$ -Arene-Zirconium(IV) Complexes  
AU Musso, Fabrizio; Solari, Euro; Floriani, Carlo; Schenk, Kurt  
CS Institut de Chimie Minerale et Analytique BCH, Universite de Lausanne, Lausanne, CH-1015, Switz.  
SO Organometallics (1997), 16(22), 4889-4895  
CODEN: ORGND7; ISSN: 0276-7333  
PB American Chemical Society  
DT Journal  
LA English  
AB Solubilization of the highly insol. polymeric  $ZrCl_4$  is achieved using 1,2,4,5-Me<sub>4</sub>C<sub>6</sub>H<sub>2</sub> (durene) as a carrier in a halogenated solvent, such as CH<sub>2</sub>Cl<sub>2</sub>, CHCl<sub>3</sub>, 1,2-C<sub>12</sub>C<sub>2</sub>H<sub>4</sub>, or o-C<sub>12</sub>C<sub>6</sub>H<sub>4</sub>. Solubilization can reach the level of 40 g of  $ZrCl_4$  in 100 mL of CH<sub>2</sub>Cl<sub>2</sub> using an equimolar amount of durene. This is a very successful approach to making available soluble  $ZrCl_4$  in a noncoordinating solvent. The solubilization occurs via the formation of a  $\eta^6$ -arene complex, which has been structurally characterized in the form of the hexamethylbenzene derivative  $[(\eta^6\text{-Me}_6\text{C}_6)\text{Zr}_2(\mu\text{-Cl})_3\text{Cl}_5]$  (3). This complex is in equilibrium, as revealed by the <sup>1</sup>H NMR spectrum in CH<sub>2</sub>Cl<sub>2</sub>, with free C<sub>6</sub>Me<sub>6</sub> and a complex (4) which contains a higher Zr/C<sub>6</sub>Me<sub>6</sub> ratio. A careful anal. of the CH<sub>2</sub>Cl<sub>2</sub> solution, containing originally  $ZrCl_4$  and durene, showed that durene underwent transformation to C<sub>6</sub>Me<sub>5</sub>H and C<sub>6</sub>Me<sub>6</sub>. These species have been trapped, bonded to zirconium in complex  $[(\eta^6\text{-C}_6\text{Me}_5\text{R})\text{Zr}_2(\mu\text{-Cl})_3\text{Cl}_5]$  (2, R = H, 50%; R = Me, 50%), which has been structurally characterized. The Me redistribution reaction in CH<sub>2</sub>Cl<sub>2</sub> can result in the inconvenient formation of byproducts derived from the Zr-assisted Friedel-Craft reaction of CH<sub>2</sub>Cl<sub>2</sub> on the arene. The intermediate of such a reaction has been isolated as [C<sub>6</sub>Me<sub>6</sub>CHCl<sub>2</sub>]<sub>n</sub>+[Zr<sub>2</sub>Cl<sub>9</sub>]<sub>n</sub> (5), whose x-ray structure is available. In order to avoid the intervention of the solvent and to speed up the reaction, the  $ZrCl_4$  rearrangement of methylbenzenes was carried out in neat hydrocarbon at 90° for 6 h. This rearrangement has a number of peculiarities: (i) unlike the original Jacobsen reaction, it involves intermol. Me transfer; (ii) it reaches an equilibrium of Me distribution; and (iii) it is catalytic in zirconium. The very high stability of 3 accounts for the isolation of the same compound derived from the  $ZrCl_4$ -assisted trimerization of 2-butyne in n-hexane.

RE.CNT 61 THERE ARE 61 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 16 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1996:679017 CAPLUS  
DN 126:25920  
TI Synthesis, Structure, and Reactivity of  $[Zr_6\text{Cl}_{18}\text{H}_5]^{2-}$ , the First Paramagnetic Species of Its Class  
AU Chen, Linfeng; Cotton, F. Albert  
CS Department of Chemistry, Texas A + M University, College Station, TX, 77843, USA  
SO Inorganic Chemistry (1996), 35(25), 7364-7369  
CODEN: INOCAJ; ISSN: 0020-1669  
PB American Chemical Society  
DT Journal  
LA English  
AB Reaction of  $[Zr_6\text{Cl}_{18}\text{H}_5]^{3-}$  (1) with 1 equiv of  $TiCl_4$  yields a new cluster anion,  $[Zr_6\text{Cl}_{18}\text{H}_5]^{2-}$  (2), which can be converted back into  $[Zr_6\text{Cl}_{18}\text{H}_5]^{3-}$  (1) upon addition of 1 equiv of Na/Hg. Cluster 2 is paramagnetic and unstable in the presence of donor mols. It undergoes a disproportionation

reaction to form 1, some Zr(IV) compds., and H<sub>2</sub>. It also reacts with TiCl<sub>4</sub> to form [Zr<sub>2</sub>Cl<sub>9</sub>]<sup>-</sup> (4) and a tetranuclear mixed-metal species, [Zr<sub>2</sub>Ti<sub>2</sub>Cl<sub>16</sub>]<sup>2-</sup> (3). The oxidation reaction of 1 with TiCl<sub>4</sub> is unique. Oxidation of 1 with H<sup>+</sup> in CH<sub>2</sub>Cl<sub>2</sub> solution gave [ZrCl<sub>6</sub>]<sup>2-</sup> (5) and H<sub>2</sub>, while in pyridine solution the oxidation product is [ZrCl<sub>5</sub>(py)]<sup>-</sup> (6). There is no reaction between 1 and TiI<sub>4</sub>, ZrCl<sub>4</sub>, [TiCl<sub>6</sub>]<sup>2-</sup>, [ZrCl<sub>6</sub>]<sup>2-</sup>, or CrCl<sub>3</sub>. [Ph<sub>4</sub>P]<sub>2</sub>[Zr<sub>6</sub>Cl<sub>18</sub>H<sub>5</sub>] (2a), [Ph<sub>4</sub>P]<sub>2</sub>[Zr<sub>2</sub>Ti<sub>2</sub>Cl<sub>16</sub>] (3a), [Ph<sub>4</sub>P][Zr<sub>2</sub>Cl<sub>9</sub>] (4a), [Ph<sub>4</sub>P]<sub>2</sub>[ZrCl<sub>6</sub>] · 4MeCN (5a · 4MeCN), and [Ph<sub>4</sub>P][ZrCl<sub>5</sub>(py)] (6a) were characterized by x-ray crystallog. 2A crystallized in the trigonal space group R.hivin.3 with cell dimensions (20°) of a 28.546(3), b 28.546(3), c 27.679(2) Å, and Z = 12. 3A crystallized in the triclinic space group P.hivin.1 with cell dimensions (-60°) of a 11.375(3), b 13.357(3), c 11.336(3) Å, α 106.07(1), β 114.77(1), γ 88.50(1)°, and Z = 1. 4A crystallized in the triclinic space group P.hivin.1 with cell dimensions (-60°) of a 12.380(5), b 12.883(5), c 11.000(4) Å, α 110.39(7), β 98.29(7), γ 73.12(4)°, and Z = 2. 5A · 4MeCN crystallized in the monoclinic space group P21/c with cell dimensions (-60°) of a 9.595(1), b 19.566(3), c 15.049(1) Å, β 98.50(1)°, and Z = 2. 6A crystallized in the monoclinic space group P21/c with cell dimensions (20°) of a 10.3390(7), b 16.491(2), c 17.654(2) Å, β 91.542(6)°, and Z = 4.

RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 17 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1996:401208 CAPLUS  
DN 125:231648  
TI Isolated ions ZrFnk- and model dimers [Zr<sub>2</sub>F<sub>n</sub>]<sup>m-</sup>  
AU Ignat'eva, L. N.; Overchuk, E. I.; Sergienko, V. I.  
CS Institut Khimii, Vladivostok, Russia  
SO Zhurnal Neorganicheskoi Khimii (1996), 41(3), 496-499  
CODEN: ZNOKAQ; ISSN: 0044-457X  
PB MAIK Nauka  
DT Journal  
LA Russian  
AB The stability of the fluorozirconate systems ZrF<sub>5</sub><sup>-</sup>, ZrF<sub>62</sub><sup>-</sup>, ZrF<sub>73</sub><sup>-</sup>, [Zr<sub>2</sub>F<sub>11</sub>]<sup>3-</sup>, [Zr<sub>2</sub>F<sub>12</sub>]<sup>4-</sup>, and [Zr<sub>2</sub>F<sub>13</sub>]<sup>5-</sup> to dissociation through different channels was studied by the Xα discrete variation method. The calcns. predict that the ions ZrF<sub>5</sub><sup>-</sup>, ZrF<sub>62</sub><sup>-</sup>, and [Zr<sub>2</sub>F<sub>13</sub>]<sup>5-</sup> are stable to dissociation. A large pos. charge at the central atom in ZrF<sub>5</sub><sup>-</sup> makes this ion unstable to the attachment of an addnl. F atom. Highly stable fluorozirconate systems, e.g., [Zr<sub>2</sub>F<sub>13</sub>]<sup>5-</sup>, can be formed as polynuclear systems.

L4 ANSWER 18 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1996:360125 CAPLUS  
DN 125:142911  
TI η<sub>6</sub>-Arene derivatives of titanium(IV), zirconium(IV) and hafnium(IV)  
AU Calderazzo, Fausto; Ferri, Isabella; Pampaloni, Guido; Troyanov, Sergei  
CS Universita di Pisa, Dipartimento di Chimica e Chimica Industriale, Sezione  
di Chimica Inorganica, Via Risorgimento 35, Pisa, I-56126, Italy  
SO Journal of Organometallic Chemistry (1996), 518(1-2), 189-196  
CODEN: JORCAI; ISSN: 0022-328X  
PB Elsevier  
DT Journal  
LA English  
AB The structure of the ionic product [Ti(η<sub>6</sub>-Me<sub>6</sub>C<sub>6</sub>)Cl<sub>3</sub>]AlCl<sub>4</sub> 1 has been determined by an x-ray diffraction experiment: orthorhombic; a = 12.890(4), b = 8.609(2), c = 9.168(3) Å; V = 1017.4(6) Å<sup>3</sup>, Z = 2; d<sub>calc</sub> = 1.584 g cm<sup>-3</sup>. Tetrachlorogallates of titanium(IV) of general formula [Ti(η<sub>6</sub>-arene)Cl<sub>3</sub>]GaCl<sub>4</sub> (arene = 1,2,4,5-Me<sub>4</sub>C<sub>6</sub>H<sub>2</sub>, Me<sub>6</sub>C<sub>6</sub>), have been obtained by reaction of TiCl<sub>4</sub> with the appropriate arene in the presence of GaCl<sub>3</sub> in toluene. Formation of complexes with less methyl-substituted

arene ligands ( $\text{MeC}_6\text{H}_5$ , 1,4- $\text{Me}_2\text{C}_6\text{H}_4$  and 1,3,5- $\text{Me}_3\text{C}_6\text{H}_3$ ) has been established by  $^{13}\text{C}$ -NMR spectroscopy. The  $\text{MCl}_4/\text{Me}_6\text{C}_6$ /benzene system gives, either in the presence or in the absence of aluminum trichloride, covalent ( $\text{M} = \text{Zr}$ ) or ionic ( $\text{M} = \text{Hf}$ ) compds. of formula  $\text{Zr}(\eta_6\text{-Me}_6\text{C}_6)\text{Cl}_2(\mu\text{-Cl})_3\text{ZrCl}_3$  4 and  $[\text{Hf}(\eta_6\text{-Me}_6\text{C}_6)\text{Cl}_3]\text{Hf}_2\text{Cl}_9$  5. Compds. 4 and 5 have been fully characterized by conventional methods including x-ray crystallog. Compound 5: orthorhombic;  $a = 17.662(6)$ ,  $b = 8.960(3)$ ,  $c = 17.683(6)$  Å;  $V = 2798.4(16)$  Å $^3$ ,  $Z = 4$ ;  $\text{d}_{\text{calc}} = 2.666$  g cm $^{-3}$ .

L4 ANSWER 19 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1991:198411 CAPLUS  
DN 114:198411  
TI Synthesis, thermal decomposition and vibrational spectra of hydrazinium(1+) heptafluorozirconate(IV) and hafnate(IV)  
AU Rahten, A.; Milicev, S.  
CS "J. Stefan" Inst., Ljubljana, Yugoslavia  
SO Thermochimica Acta (1990), 171, 185-92  
CODEN: THACAS; ISSN: 0040-6031  
DT Journal  
LA English  
AB ( $\text{N}_2\text{H}_5$ ) $3\text{MF}_7$  ( $\text{M} = \text{Zr}$ ,  $\text{Hf}$ ) were synthesized from aqueous solns. of ( $\text{N}_2\text{H}_6$ ) $3\text{M}_2\text{F}_{13}\text{F}$  and  $\text{N}_2\text{H}_4\cdot\text{H}_2\text{O}$ . IR and Raman spectra show the presence of a dimeric or polymeric anion with a coordination number  $>6$ , and 2 types of  $\text{N}_2\text{H}_5^+$ , involved predominantly through their  $\text{NH}_3^+$  groups in weak H bonds. On heating, the compds. start to lose weight  $>120^\circ$  ( $\text{Zr}$  compound) or  $>110^\circ$  ( $\text{Hf}$  compound). Decomposition proceeds through  $(\text{NH}_4)_2\text{MF}_6$  and  $\text{NH}_4\text{MF}_5$  ( $\gamma\text{-NH}_4\text{ZrF}_5$ ) to  $\text{MF}_4$  (predominantly  $\alpha\text{-ZrF}_4$ ), and finishes at .apprx.350° ( $\text{Zr}$  compound) or .apprx.380° ( $\text{Hf}$  compound). Raman spectra of decomposition intermediates show that the composite anionic part transforms through other complex or polymeric fluorozirconate(IV) or hafnate(IV) anions to  $\text{MF}_4$ , and no simple  $\text{MF}_6^{2-}$  or  $\text{MF}_5^-$  appear.

L4 ANSWER 20 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1991:198403 CAPLUS  
DN 114:198403  
TI Tellurium cations by Lewis acid-base reactions: syntheses and crystal structures of  $(\text{Te}42^+)(\text{Zr}_2\text{Br}_102^-)$  and  $(\text{TeBr}_3^+)(\text{Zr}_2\text{Br}_9^-)$   
AU Beck, Johannes  
CS Inst. Anorg. Chem., Univ. Karlsruhe, Karlsruhe, D-7500/1, Germany  
SO Chemische Berichte (1991), 124(4), 677-81  
CODEN: CHBEAM; ISSN: 0009-2940  
DT Journal  
LA English  
AB  $\text{ZrBr}_4$  reacts with  $\text{Te}_2\text{Br}$  at  $210^\circ$  in quant. yield to afford  $(\text{Te}42^+)(\text{Zr}_2\text{Br}_102^-)$  as blue-black, moisture-sensitive crystals. The crystal structure determination shows that  $(\text{Te}4)(\text{Zr}_2\text{Br}_10)$  consists of planar, nearly square  $\text{Te}42^+$  and  $\text{Zr}_2\text{Br}_102^-$  ions, that form edge-sharing double octahedra. Both ions possess crystallog.  $2/m$  ( $\text{C}2\text{h}$ ) symmetry. At  $> 250^\circ$   $(\text{Te}4)(\text{Zr}_2\text{Br}_10)$  decomp. with cleavage of Te-Te bonds into  $(\text{TeBr}_3^+)(\text{Zr}_2\text{Br}_9^-)$ , which forms yellow, hygroscopic crystals.  $(\text{TeBr}_3^+)(\text{Zr}_2\text{Br}_9^-)$  can also be obtained by the reaction of 2 equiv of  $\text{ZrBr}_4$  with  $\text{TeBr}_4$  at  $260^\circ$ . Its crystal structure is built of  $\text{Zr}_2\text{Br}_9^-$  ions, that form face-sharing double octahedra, and of pyramidal  $\text{TeBr}_3^-$  ions, resulting in a strongly deformed octahedral coordination for the Te atom. The  $\text{Zr}_2\text{Br}_9$  double octahedra and the  $\text{TeCl}_6$  octahedra are connected by common edges and corners to infinite chains.  $(\text{Te}4)(\text{Zr}_2\text{Br}_10)$  and  $(\text{TeBr}_3^+)(\text{Zr}_2\text{Br}_9^-)$  are monoclinic, space groups  $\text{I}2/m$  and  $\text{P}21/c$ ,  $Z = 4$ ,  $\text{R/R}_{\text{w}} = 0.041/0.031$  and  $0.045/0.036$ , resp.

L4 ANSWER 21 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1990:451378 CAPLUS  
DN 113:51378  
TI Fluoro- and oxofluorozirconates  
AU Sengupta, A. K.; Bhattacharyya, U.

CS Dep. Chem., Kalyani Univ., Kalyani, 741 235, India  
SO Journal of Fluorine Chemistry (1990), 46(2), 229-41  
CODEN: JFLCAR; ISSN: 0022-1139  
DT Journal  
LA English  
AB The preps. of  $(LH_2)[ZrF_3] \cdot mH_2O$  ( $L$  = ethylenediamine ( $m = 0$ ) and biguanide ( $m = 1$ )),  $(L_1H)_2[ZrF_6] \cdot nH_2O$  ( $L_1$  = guanidine ( $n = 1$ ), pyridine (py) ( $n = 0$ )),  $(L_2H)[ZrF_6] \cdot H_2O$  ( $L_2$  =  $\alpha$ -,  $\beta$ -, and  $\gamma$ -picoline (pic)),  $(L_3H_2)[ZrOF_3]_2 \cdot xH_2O$  ( $L_3$  = ethylenediamine ( $x = 5$ ), propylene-1,2-diamine ( $x = 3$ ), N,N'-dimethylethylenediamine ( $x = 3$ )),  $MI[ZrOF_3] \cdot 1.5H_2O$  ( $MI$  = alkali metals),  $(N_2H_5)[Zr_2O_2F_5] \cdot 4H_2O$  and  $(L_4H_2)[ZrOF_4]$  ( $L_4$  = 1,10-phenanthroline and 2,2'-bipyridine) are described. The compds. were characterized by chemical anal., TGA, IR spectroscopy and x-ray powder photog. The  $(pyH)_2[ZrF_6]$  is unstable and undergoes slow decomposition on keeping in air. On isothermal heating at  $120^\circ$  it yields  $(pyH)[ZrF_5]$ . At  $180^\circ$  ( $\alpha$ -picH)  $[ZrF_5] \cdot H_2O$  yields  $(\alpha$ -picH)  $[Zr_2F_9]$ .  $K[ZrOF_3] \cdot 1.5H_2O$  yields  $K[ZrOF_3] \cdot 0.5H_2O$  and the anhydrous compound successively at  $130$  and  $225^\circ$ , resp. The corresponding anhydrous Cs compound is produced at  $220^\circ$ . IR spectra suggest the presence of Zr-O-Zr chains in the oxofluoro compds. From the various types of studies it appears that the oxofluorozirconates contain only a fraction of water as Zr-OH group.

L4 ANSWER 22 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1990:227069 CAPLUS  
DN 112:227069  
TI Crystal structure and vibrational spectra of hydrazinium(2+) tri- $\mu$ -fluorobis[pentafluorozirconate(IV)] fluoride and vibrational spectra of its hafnium analog  
AU Rahten, A.; Leban, I.; Milicev, S.; Zemva, B.  
CS "J. Stefan" Inst., E. Kardelj Univ., Ljubljana, Yugoslavia  
SO Journal of Crystallographic and Spectroscopic Research (1990), 20(1), 9-15  
CODEN: JCREDB; ISSN: 0277-8068  
DT Journal  
LA English  
AB The title Zr compound is monoclinic, space group P21, with  $a = 5.670(1)$ ,  $b = 10.984(2)$ ,  $c = 10.601(2)$  Å, and  $\beta = 93.88(1)^\circ$ ;  $dc = 2.776$  for  $Z = 2$ . The final  $R = 0.0205$  and  $Rw = 0.0294$  for 2003 reflections. Atomic coordinates are given. Two different types of  $N_2H_6^{2+}$  ions are present. One is involved in strong H-bonds to F- in infinite chains running along the a-axis, and the other links the structure through weaker bi- and trifurcated H-bonds to F ligands of the  $Zr_2F_13^{5-}$  ions. The  $Zr_2F_13^{5-}$  ions have very nearly C2 point symmetry and are formed by joining 2 distorted bicapped trigonal prisms of  $ZrF_8$ -units through a common face. The vibrational spectra of the Zr and its Hf analog are nearly identical, with the exception of a strong IR band, which is assigned to a stretching mode of the moving central atom within the anion. The anion part of the spectrum is simple, showing broad unresolved bonds. The cation part shows 2 types of  $N_2H_6^{2+}$  ions. H-bonding is strongly present in the spectra, but no simple correlations with the H-bond strength is evident.

L4 ANSWER 23 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1984:521874 CAPLUS  
DN 101:121874  
TI Metal chloride-phosphorus chloride-alkyl chloride complexes: reactions with gold(III), zirconium(IV), platinum(IV) and oxouranium(VI) chlorides  
AU Lata, Sneh; Dubey, S. N.; Puri, D. M.  
CS Chem. Dep., Kurukshetra Univ., Kurukshetra, 132 119, India  
SO Journal of the Indian Chemical Society (1983), 60(10), 911-13  
CODEN: JICSAH; ISSN: 0019-4522  
DT Journal  
LA English  
AB  $[RPCl_3]X$  ( $R$  = tert-Bu, tert-amyl, cyclohexyl, triphenylmethyl;  $X$  =  $AuCl_4$ ,  $Zr_2Cl_9$ , 0.5  $PtCl_6$ , 0.5  $UO_2Cl_4$ ) and  $[RPCl_2Ph]Z$  ( $Z$  =  $AuCl_4$ ,  $Zr_2Cl_9$ , 0.5

UO<sub>2</sub>Cl<sub>4</sub>) were prepared from HAuCl<sub>4</sub>, ZrCl<sub>4</sub>, H<sub>2</sub>PtCl<sub>6</sub>, or UO<sub>2</sub>Cl<sub>2</sub> and PCl<sub>3</sub> or PCl<sub>2</sub>Ph and RCl. The products were characterized by elemental anal., thermogravimetric anal., elec. conductivity, magnetic susceptibility, and IR and electronic spectral methods.

L4 ANSWER 24 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1983:529309 CAPLUS  
DN 99:129309  
TI TDPAC investigation on ammonium hafnium fluoride (NH<sub>4</sub>Hf<sub>2</sub>F<sub>9</sub>)  
AU Martinez, J. A.; Caracoche, M. C.; Rodriguez, A. M.; Rivas, P. C.; Lopez  
Garcia, A. R.  
CS Fac. Cienc. Exactas, Univ. Nac. La Plata, La Plata, 1900, Argent.  
SO Hyperfine Interactions (1983), 14(2), 135-8  
CODEN: HYINDN; ISSN: 0304-3843  
DT Journal  
LA English  
AB Time-differential perturbed angular correlation (TDPAC) measurements in NH<sub>4</sub>Hf<sub>2</sub>F<sub>9</sub> [87118-39-6] were performed between 15 and 580 K. The compound was stable in the whole temperature range and no phase transitions were observed. Exptl. results could be explained by assuming 2 equally populated quadrupole interactions which suggest an inequivalence between the 2 sites occupied by the Hf atoms in the mol.

L4 ANSWER 25 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1983:79040 CAPLUS  
DN 98:79040  
TI Activities in systems based on alkali metal fluorides and tetrafluorides. I. Metal fluoride-zirconium tetrafluoride systems  
AU Sidorov, L. N.; Pozdyshkina, O. V.; Zhuravleva, L. V.; Korenev, Yu. M.  
CS Mosk. Gos. Univ., Moscow, USSR  
SO Deposited Doc. (1982), VINITI 58-82, 37 pp. Avail.: VINITI  
DT Report  
LA Russian  
AB Activities were calculated in MF-ZrF<sub>4</sub> (M = Li, Na, K, Rb, Cs) melts from heats of melting of the components and M<sub>3</sub>ZrF<sub>7</sub> combined with published mass spectral values for partial pressures over these melts. Equilibrium consts. and heats and entropies of formation of MZrF<sub>5</sub>, M<sub>2</sub>ZrF<sub>6</sub>, M<sub>3</sub>ZrF<sub>7</sub>, and MZr<sub>2</sub>F<sub>9</sub> were calculated at 800-1300 K.

L4 ANSWER 26 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1983:79038 CAPLUS  
DN 98:79038  
TI Activities in systems based on alkali metal fluorides and tetrafluorides. II. Metal fluoride-hafnium tetrafluoride systems  
AU Zhuravleva, L. V.; Pozdyshkina, O. V.; Sidorov, L. N.  
CS Khim. Fak., Mosk. Gos. Univ., Moscow, USSR  
SO Deposited Doc. (1982), VINITI 59-82, 15 pp. Avail.: VINITI  
DT Report  
LA Russian  
AB Extrapolation of activity values for MF-ZrF<sub>4</sub> (M = Li, Na, K, Rb, Cs) systems along with estimated values for heats of melting of HfF<sub>4</sub> enabled calcn. of activities in the MF-HfF<sub>4</sub> systems at 1155 K. Equilibrium consts. and heats and entropies of formation were calculated for MHfF<sub>5</sub>, M<sub>2</sub>HfF<sub>6</sub>, M<sub>3</sub>HfF<sub>7</sub>, and MHf<sub>2</sub>F<sub>9</sub> at 800-1200 K.

L4 ANSWER 27 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1982:589075 CAPLUS  
DN 97:189075  
TI Mass spectrometric determination of the enthalpies of dissociation of gaseous complex fluorides into neutral and charged particles. VI. Enthalpy of formation of pentafluorozirconate (ZrF<sub>5</sub><sup>-</sup>)  
AU Skokan, E. V.; Sorokin, I. D.; Sidorov, L. N.; Nikitin, M. I.

CS Dep. Chem., Moscow State Univ., Moscow, 117234, USSR  
SO International Journal of Mass Spectrometry and Ion Physics (1982), 43(4),  
309-25  
CODEN: IJMIBY; ISSN: 0020-7381  
DT Journal  
LA English  
AB Effusion and mass spectroscopic methods were used to study the ion/mol. equilibrium involving neg ions  $ZnF_5^-$  and  $Zr_2F_9^-$ . The heats of the reactions:  $ZrF_4 + F^-$  .dblharw.  $ZrF_5^-$  and  $ZrF_4 + ZrF_5^-$  .dblharw.  $Zr_2F_9^-$  were determined at 298.15 K, from which the heats of formation were derived. By using these values and information from the literature, heats of formation and mol. consts. were estimated for  $MZrF_5$  and  $MZr_2F_9$  ( $M$  is an alkali metal) and their heats of dissociation into ions were calculated

L4 ANSWER 28 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1982:479745 CAPLUS  
DN 97:79745  
TI Synthesis and characterization of some binary and ternary zirconium iodides  
AU Guthrie, D. H.  
CS Ames Lab., Ames, IA, USA  
SO Report (1981), IS-T-958; Order No. DE82005452, 125 pp. Avail.: NTIS  
From: Energy Res. Abstr. 1982, 7(8), Abstr. No. 22652  
DT Report  
LA English  
AB Studies of binary  $ZrI_4$ -Zr and ternary  $CsI$ -Zr- $ZrI_4$  systems produced several new compds. The new binary compds. include two polymorphs of  $ZrI_2$  ( $\alpha$  and  $\beta$ ) as well as a phase described earlier as  $ZrI_{1.8}$ .  $\alpha$ - $ZrI_2$  is monoclinic space group  $P21/m$  with a 6.821(2), b 3.741(1), c 14.937(3) Å, and  $\beta$  95.66(3)°; Z = 4 (R = 0.064).  $\beta$ - $ZrI_2$  is trigonal, space group R.hivin.3, with hexagonal axes a 14.502(2) and c 9.996(2) Å; Z = 18 (R = 0.109). This phase contains a  $Zr_6I_{12}$  cluster. Guinier x-ray powder diffraction data previously reported for  $ZrI_{1.8}$  has now been found to arise from  $\alpha$ - $ZrI_2$  intergrown with an orthorhombic  $ZrI_2$  phase (perhaps isostructural with  $WTe_2$  plus an unknown phase. The ternary compds. include  $Cs_2ZrI_6$ ,  $Cs_3Zr_2I_9$ , and  $CsZr_6I_{14}$ . The first is isostructural with  $K_2PtCl_6$ .  $Cs_3Zr_2I_9$  belongs to space group  $P6_3/mmc$  with a 8.269(1) and c 19.908(3) Å; Z = 2. This phase has a  $Cs_3Cr_2Cl_9$ -type structure, with Zr-Zr distance of 3.134(4) Å (R = 0.087). Crystals of  $Cs_3Zr_6I_{14}$  is orthorhombic, space group Ccmb, with a 14.275(4), b 15.880(4), and c 12.953(4) Å (R = 0.062). This phase also contains a  $Zr_6I_{12}$  cluster.

L4 ANSWER 29 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1982:110997 CAPLUS  
DN 96:110997  
TI Mass-spectrometric study of (potassium fluoride + zirconium tetrafluoride) and cesium fluoride + zirconium tetrafluoride). Molecular composition of vapor, activities, and congruent and incongruent sublimation of  $3KF.ZrF_4$  crystal  
AU Sidorov, L. N.; Karasev, N. M.; Korenev, Yu. M.  
CS Dep. Chem., Moscow State Univ., Moscow, 117234, USSR  
SO Journal of Chemical Thermodynamics (1981), 13(10), 915-35  
CODEN: JCTDAF; ISSN: 0021-9614  
DT Journal  
LA English  
AB The Knudsen-effusion method was used together with mass-spectrometric anal. of evaporation products to study  $KF + ZrF_4$  and  $CsF + ZrF_4$  systems. The mols.  $MZrF_5$ ,  $MZr_2F_9$ , and  $M_2ZrF_6$  ( $M$  = alkali metal) were found in the gas phase and their partial pressures and enthalpies of dissociation were obtained. Activities of pure components were determined at 1165 K. The solid compound  $3KF.ZrF_4$ , which melts congruently at 1197 K, sublimes congruently only  $\leq 1103$  K.

L4 ANSWER 30 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1981:165889 CAPLUS  
DN 94:165889  
TI Metal-metal repulsion and bonding in confacial bioctahedra. The crystal structures of cesium yttrium iodide ( $Cs_3Y_2I_9$ ) and cesium zirconium iodide ( $Cs_3Zr_2I_9$ ) and comparison with related phases  
AU Guthrie, Dennis H.; Meyer, Gerd; Corbett, John D.  
CS Ames Lab., Iowa State Univ., Ames, IA, 50011, USA  
SO Inorganic Chemistry (1981), 20(4), 1192-6  
CODEN: INOCAJ; ISSN: 0020-1669  
DT Journal  
LA English  
AB The title compds. were synthesized by reaction of  $CsI_3$  and Y or  $CsI$ , Zr, and  $ZrI_4$  at 750-850° in welded Ta containers. Both have the  $Cs_3Cr_2Cl_9$ -type structure, space group  $P6_3/mmc$ , with a 8.406(1), 8.269(1) and c 21.280(5), 19.908(3);  $R = 0.050$ , 0.082,  $R_w = 0.082$ , 0.077 for  $Cs_3Y_2I_9$  and  $Cs_3Zr_2I_9$ , resp. The transition from the Y to the Zr compound is accompanied by a decrease of the metal-metal distance in the  $M_2I_9$ -confacial bioctahedra from 4.052(9) to 3.129(4) Å due to the formation of a Zr-Zr bond. Correspondingly large changes occur in the internal angles in the M-I-M bridges. Parameters of 5  $M_2X_9$  groups in the  $Cs_3Cr_2Cl_9$ -type structure and  $CsCdCl_3$ , all of which lack M-M bonds, are considered in terms of a model which recognizes the existence of both longer M-X bridge bonds and compromise bridge angles. Nonbonding repulsion between M atoms is not a significant factor in these structures. The effects of packing and metal-metal bonding are also considered.

L4 ANSWER 31 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1981:21167 CAPLUS  
DN 94:21167  
TI Application of high temperature mass spectrometry to the investigation of P-T-X phase diagrams  
AU Korenev, Yu. M.  
CS Dep. Chem., Moscow State Univ., Moscow, 117234, USSR  
SO Advances in Mass Spectrometry (1980), 8A, 458-61  
CODEN: AMSPAII; ISSN: 0568-000X  
DT Journal  
LA English  
AB High temperature mass spectroscopy was used to study the phase diagrams of the alkali metal- $HfF_4$  and - $ZrF_4$  systems. The partial pressures of all the mols. present in the vapor phase over the whole range of concentration as well as their heats of evaporation were determined. In addition, dissociation enthalpies and entropies of the complex mols. formed were determined. The gaseous phase composition and the total pressures at the temperature and concentration corresponding to the lines of the 3-phase equilibrium were calculated to construct the T-X and P-T projections of the phase diagram of the system.

L4 ANSWER 32 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1980:574608 CAPLUS  
DN 93:174608  
TI T-x and P-T projections of a rubidium fluoride-zirconium fluoride system phase diagram  
AU Korenev, Yu. M.; Skokan, E. V.; Karasev, N. M.; Akishin, P. A.  
CS Mosk. Gos. Univ., Moscow, USSR  
SO Vestnik Moskovskogo Universiteta, Seriya 2: Khimiya (1980), 21(4), 400  
CODEN: VMUKA5; ISSN: 0579-9384  
DT Journal  
LA Russian  
AB A Knudsen effusion-mass spectral study at 839-1094 K showed that the vapor

over RbF-ZrF<sub>4</sub> systems containing 33.3-61.5 mol % ZrF<sub>4</sub> contains RbF, ZrF<sub>4</sub>, RbZrF<sub>5</sub>, Rb<sub>2</sub>ZrF<sub>2</sub>, Rb<sub>2</sub>ZrF<sub>6</sub>, and RbZr<sub>2</sub>F<sub>9</sub>. Partial pressures, heats of evaporation, and heats of dissociation were determined (RbZrF<sub>5</sub> = RbF + ZrF<sub>4</sub>,  $\Delta H^\circ 1094K = 62.6 \pm 2.6$ ; Rb<sub>2</sub>ZrF<sub>6</sub> = RbF + RbZrF<sub>5</sub>,  $45.4 \pm 3.6$ ; RbZr<sub>2</sub>F<sub>9</sub> = RbZrF<sub>5</sub> + ZrF<sub>4</sub>,  $\Delta H^\circ 839K = 42.4 \pm 6$  kcal/mol). Temperature-composition and pressure-temperature diagrams were constructed.

L4 ANSWER 33 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1980:432482 CAPLUS  
DN 93:32482  
TI P-T and T-x projections of a phase diagram of the cesium fluoride-zirconium fluoride system  
AU Karasev, N. M.; Korenev, Yu. M.; Sidorov, L. N.  
CS USSR  
SO Zhurnal Neorganicheskoi Khimii (1980), 25(5), 1362-7  
CODEN: ZNOKAQ; ISSN: 0044-457X  
DT Journal  
LA Russian  
AB A Knudsen effusion-mass spectral study of evaporation products in the CsF-ZrF<sub>4</sub> system showed formation of CsF, Cs<sub>2</sub>F<sub>2</sub>, ZrF<sub>4</sub>, Cs<sub>2</sub>ZrF<sub>6</sub>, CsZrF<sub>5</sub>, and CsZr<sub>2</sub>F<sub>9</sub>. Heats of evaporation and partial pressures of vapor species were determined as a function of melt composition Heats of dissociation of CsZrF<sub>5</sub>, Cs<sub>2</sub>ZrF<sub>6</sub>, and CsZr<sub>2</sub>F<sub>9</sub> are  $59.6 \pm 2.6$ ,  $42.6 \pm 4.0$ , and  $44.3 \pm 4.0$  kcal/mol, resp. The pressure-temperature and temperature-composition phase diagrams are given.

L4 ANSWER 34 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1980:153753 CAPLUS  
DN 92:153753  
TI Molecular composition of vapor in a sodium fluoride-zirconium fluoride system  
AU Korenev, Yu. M.; Sidorov, L. N.; Rykov, A. N.; Novoselova, A. V.  
CS USSR  
SO Zhurnal Neorganicheskoi Khimii (1980), 25(1), 284-90  
CODEN: ZNOKAQ; ISSN: 0044-457X  
DT Journal  
LA Russian  
AB A combination Knudsen effusion-mass spectral study showed formation of Na<sub>2</sub>ZrF<sub>6</sub>, NaZrF<sub>5</sub>, (NaZrF<sub>5</sub>)<sub>2</sub>, and NaZr<sub>2</sub>F<sub>9</sub> in the vapor phase. Partial pressures of all vapor components were determined and then used (along with heats of evaporation) to calculate vapor compns. and to construct T-x and P-T diagrams for the NaF-ZrF<sub>4</sub> system.

L4 ANSWER 35 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1980:47966 CAPLUS  
DN 92:47966  
TI Use of a mass spectral method to construct P-T and T-x projections of the phase diagram of lithium fluoride-zirconium tetrafluoride system  
AU Korenev, Yu. M.; Rykov, A. N.; Novoselova, A. V.  
CS Mosk. Gos. Univ., Moscow, USSR  
SO Zhurnal Neorganicheskoi Khimii (1979), 24(8), 2201-7  
CODEN: ZNOKAQ; ISSN: 0044-457X  
DT Journal  
LA Russian  
AB Compns. and vapor pressures were determined by Knudsen effusion-mass spectral anal. methods. The saturated vapor contains LiF, Li<sub>2</sub>F<sub>2</sub>, Li<sub>3</sub>F<sub>3</sub>, ZrF<sub>4</sub>, LiZrF<sub>5</sub>, Li<sub>2</sub>ZrF<sub>6</sub>, and LiZr<sub>2</sub>F<sub>9</sub>. Heats of vaporization and partial pressures were calculated as a function of melt composition Heats of dissociation of LiZrF<sub>5</sub>, Li<sub>2</sub>ZrF<sub>6</sub>, and LiZr<sub>2</sub>F<sub>9</sub> are  $55.0 \pm 3.0$ ,  $56.2 \pm 3.5$ , and  $40.3 \pm 3.0$  kcal/mol, resp.

L4 ANSWER 36 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1979:77198 CAPLUS  
DN 90:77198  
TI Pressure-temperature and temperature-composition projections of the phase diagram of a cesium fluoride-hafnium tetrafluoride system  
AU Loshin, A. F.; Korenev, Yu. M.; Novoselova, A. V.  
CS USSR  
SO Deposited Doc. (1977), VINITI 2462-77, 27 pp. Avail.: VINITI  
DT Report  
LA Russian  
AB Vapor composition of the CsF-HfF<sub>4</sub> system was studied by mass spectroscopy. Formation of CsHfF<sub>5</sub> and CsHf<sub>2</sub>F<sub>9</sub> is indicated, but not Cs<sub>2</sub>HfF<sub>6</sub> (in vapor phase). Entropies of dissociation of CsHfF<sub>5</sub> and CsHf<sub>2</sub>F<sub>9</sub> are 32 and 30 entropy units, resp., and heats of dissociation are 59.7 ± 3.0 and 44.4 ± 4.0, resp. Heats of vaporization of HfF<sub>4</sub>, CsHfF<sub>5</sub>, and CsHf<sub>2</sub>F<sub>9</sub> were calculated for various melt compns. Activities and free energies of formation of melts of CsF and HfF<sub>4</sub> at various compns. are given.

L4 ANSWER 37 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1976:549834 CAPLUS  
DN 85:149834  
TI Partial pressures, activities, and heats of evaporation in the potassium fluoride-zirconium fluoride system  
AU Karasev, N. M.; Sidorov, L. N.; Korenev, Yu. M.  
CS Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR  
SO Zhurnal Fizicheskoi Khimii (1976), 50(6), 1629  
CODEN: ZFKHA9; ISSN: 0044-4537  
DT Journal  
LA Russian  
AB The composition of the vapors over the complex mols. KZrF<sub>5</sub>, K<sub>2</sub>ZrF<sub>6</sub> and KZr<sub>2</sub>F<sub>9</sub> were determined by the Knudsen effusion method in combination with mass spectrometry. The partial pressures of these complex mols. and the partial pressure and activities of KF [7789-23-3] and ZrF<sub>4</sub> [7783-64-4] in the vapor phase were determined. The heats of dissociation at 1165°K of these complex mols. were calculated from the activities, heats of evaporation and equilibrium consts. for the dissociation reactions.

L4 ANSWER 38 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1976:499966 CAPLUS  
DN 85:99966  
TI Molecular composition of vapor and interpretation of mass spectrum in potassium fluoride-zirconium fluoride and cesium fluoride-zirconium fluoride systems  
AU Karasev, N. M.; Sidorov, L. N.; Korenev, Yu. M.  
CS Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR  
SO Zhurnal Fizicheskoi Khimii (1976), 50(6), 1630  
CODEN: ZFKHA9; ISSN: 0044-4537  
DT Journal  
LA Russian  
AB A Knudsen effusion method using mass spectral anal. was used to determine the vapor composition over ZrF<sub>4</sub>-MF (M = K, Cs) melts. The vapor contains MZrF<sub>5</sub>, MZr<sub>2</sub>F<sub>9</sub>, and traces of M<sub>2</sub>ZrF<sub>6</sub> as well as the initial components.

L4 ANSWER 39 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1974:544914 CAPLUS  
DN 81:144914  
TI Metal halide-phosphorus halide-alkyl halide complexes. III.  $\mu$ -Trihalohexahalodimettallate ions of titanium and zirconium  
AU Bullock, Joseph I.; Parrett, Frederick W.; Taylor, Nicholas J.  
CS Dep. Chem., Univ. Surrey, Surrey, UK  
SO Canadian Journal of Chemistry (1974), 52(16), 2880-8  
CODEN: CJCHAG; ISSN: 0008-4042  
DT Journal

LA English  
AB TiCl<sub>4</sub> reacted rapidly with PCl<sub>3</sub>, PBr<sub>3</sub>, and MePCl<sub>2</sub> in the presence of Me<sub>3</sub>CCl to give compds. containing a phosphonium cation, R<sub>1</sub>R<sub>2</sub>PX<sub>2</sub><sup>+</sup> (R<sub>1</sub> = Me<sub>3</sub>C; R<sub>2</sub> = Cl, Br, or Me; X = Cl or Br), and the principal metal-containing anion, Ti<sub>2</sub>C<sub>19</sub><sup>-</sup>. For PBr<sub>3</sub> and Me<sub>3</sub>CCl, a stoichiometric product, [Me<sub>3</sub>CPBr<sub>3</sub>][Ti<sub>2</sub>C<sub>19</sub>] was obtained which was characterized by using vibrational spectroscopy. The other reactions gave nonstoichiometric materials, the sublimates of which may contain higher polymeric anions; the residues contained TiCl<sub>5</sub><sup>-</sup> along with the parent dimeric anion. ZrCl<sub>4</sub> and TiBr<sub>4</sub> reacted in a similar way to give Zr<sub>2</sub>C<sub>19</sub><sup>-</sup> and Ti<sub>2</sub>Br<sub>9</sub><sup>-</sup> in stoichiometric reactions.

L4 ANSWER 40 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1959:37873 CAPLUS  
DN 53:37873  
OREF 53:6742g-i  
TI Vapor pressures and molecular composition of vapors of the RbF-ZrF<sub>4</sub> and LiF-ZrF<sub>4</sub> systems  
AU Sense, Karl A.; Stone, Richard W.  
CS Battelle Mem. Inst., Columbus, O.  
SO Journal of Physical Chemistry (1958), 62, 1411-18  
CODEN: JPCHAX; ISSN: 0022-3654  
DT Journal  
LA Unavailable  
AB The vapor pressure of RbF at 798-1059° is given by  $\log p(\text{mm.}) = 63 - 17,722/T - 15.66 \log T$  and at 589-798° by  $\log p(\text{mm.}) = 10.263 - 11,266/T$ . The vapor pressure of LiF at 850-1060° is given by  $\log p(\text{mm.}) = 8.797 - 11,409/T$ . Vapor pressures of the RbF-ZrF<sub>4</sub> and LiF-ZrF<sub>4</sub> systems were measured over the ranges 690-1060 and 670-1060°, resp. The complexes RbZr<sub>2</sub>F<sub>9</sub> and LiZr<sub>2</sub>F<sub>9</sub> exist in the vapor phases. Further work on the NaF-ZrF<sub>4</sub> system points to the existence of the gaseous complex NaZr<sub>2</sub>F<sub>9</sub> rather than NaZrF<sub>5</sub> as previously supposed (C.A. 52, 14308h). A phase diagram of the RbF-ZrF<sub>4</sub> system derived from vapor-pressure data showed a constant b.p. to exist at about 33 mole % ZrF<sub>4</sub> for a total pressure of 1 mm. Plots showing the change of total pressure with composition for various temps., as well as m.p. curves, were given for the various systems.

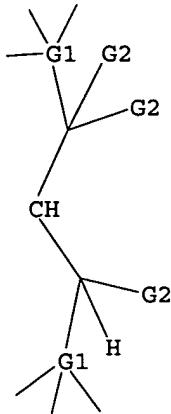
L4 ANSWER 41 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1957:88941 CAPLUS  
DN 51:88941  
OREF 51:16068e-h  
TI Vapor pressures of the rubidium fluoride-zirconium fluoride and lithium fluoride-zirconium fluoride systems  
AU Sense, Karl A.; Stone, Richard W.; Filbert, Robert B., Jr.  
CS Battelle Mem. Inst., Columbus, O.  
SO U.S. Atomic Energy Comm. (1957), BMI-1199, 35 pp.  
DT Journal  
LA Unavailable  
AB The vapor pressures of RbF and LiF were determined in the temperature range of 589 to 1059° and 851 to 1060°, resp. The pressure-temperature relations for solid RbF were expressed by an equation:  $\log p = 10.263 - (11,226/T)$ . Liquid RbF results were best expressed by the equation:  $\log p = 63.823 - (17,772/T) - 15.660 \log T$ . The m.p. of RbF could not be determined with any degree of certainty from these data alone; however, the m.p. of RbF was found to be 798° by thermal analysis. The vapor-pressure data obtained for LiF in the temperature range of 851 to 1060° was expressed by the equation:  $\log p = 8.797 - (11,409/T)$ . Vapor pressures of the RbF-ZrF<sub>4</sub> and LiF-ZrF<sub>4</sub> systems were measured over the temperature ranges of 690 to 1060° and 670 to 1060°, resp. The complexes RbZr<sub>2</sub>F<sub>9</sub> and LiZr<sub>2</sub>F<sub>9</sub> were believed to exist in the vapor phase of the respective systems. A more detailed examination of the NaF-ZrF<sub>4</sub> system indicated that the vapor-phase complex NaZr<sub>2</sub>F<sub>9</sub> exists, rather than NaZrF<sub>5</sub>, as previously

supposed. Vapor-pressure data were used to construct a phase diagram for the RbF-ZrF<sub>4</sub> system at a total pressure of 1 mm. of Hg. A constant b.p. was found at approx. 33 1/3 mole % ZrF<sub>4</sub>.

(FILE 'HOME' ENTERED AT 13:50:38 ON 21 AUG 2006)

FILE 'REGISTRY' ENTERED AT 13:51:02 ON 21 AUG 2006  
L1 STRUCTURE uploaded

=> d l1  
L1 HAS NO ANSWERS  
L1 STR



G1 Si,Ge,Pb,Sn  
G2 Me,Et,n-Pr,i-Pr,n-Bu,i-Bu,s-Bu,t-Bu,Ph,H

Structure attributes must be viewed using STN Express query preparation.

=> s l1  
SAMPLE SEARCH INITIATED 13:51:26 FILE 'REGISTRY'  
SAMPLE SCREEN SEARCH COMPLETED - 12052 TO ITERATE  
  
16.6% PROCESSED 2000 ITERATIONS 6 ANSWERS  
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)  
SEARCH TIME: 00.00.01  
  
FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED ITERATIONS: 234463 TO 247617  
PROJECTED ANSWERS: 363 TO 1083

L2 6 SEA SSS SAM L1

=> s l1 full  
FULL SEARCH INITIATED 13:51:32 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED - 239601 TO ITERATE  
  
100.0% PROCESSED 239601 ITERATIONS ( 1 INCOMPLETE) 528 ANSWERS  
SEARCH TIME: 00.00.02

L3 528 SEA SSS FUL L1

=> fil caplus  
COST IN U.S. DOLLARS SINCE FILE TOTAL  
FULL ESTIMATED COST ENTRY SESSION  
166.94 167.15

FILE 'CAPLUS' ENTERED AT 13:51:40 ON 21 AUG 2006

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 21 Aug 2006 VOL 145 ISS 9  
FILE LAST UPDATED: 20 Aug 2006 (20060820/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply. They are available for your review at:

<http://www.cas.org/infopolicy.html>

=> s 13  
L4 373 L3

=> s 14 and py<2002  
21829994 PY<2002  
L5 275 L4 AND PY<2002

=> s 15 and cation#  
378631 CATION#  
L6 3 L5 AND CATION#

=> d 1-3 bib abs

L6 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1979:86393 CAPLUS  
DN 90:86393  
TI Radical ions. XXVIII. Tris(trimethylsilylmethyl)aminium,  
.ovrhdot.+N(CH<sub>2</sub>Si(CH<sub>3</sub>)<sub>3</sub>)<sub>3</sub>: a stable fluxional aminium radical  
cation  
AU Bock, Hans; Kaim, Wolfgang; Kira, Mitsuo; Osawa, H.; Sakurai, H.  
CS Inst. Inorg. Chem., Univ. Frankfurt, Frankfurt/Main, Fed. Rep. Ger.  
SO Journal of Organometallic Chemistry (1978), 164(3), 295-304  
CODEN: JORCAI; ISSN: 0022-328X  
DT Journal  
LA English  
AB The 1st ionization potentials of 11 R<sub>3</sub>-nN(CH<sub>2</sub>SiMe<sub>2</sub>)<sub>n</sub>, determined by  
photoelectron spectroscopy, are 7.66-9.07 eV. The most easily ionized  
mol., N(CH<sub>2</sub>SiMe<sub>3</sub>)<sub>3</sub>, can also be oxidized with AlCl<sub>3</sub> in CH<sub>2</sub>Cl<sub>2</sub> to its  
aminium radical cation. The ESR spectra at 180-310 K display a  
strong temperature dependence due to rotations about the N-CH<sub>2</sub> bonds.

L6 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1972:33675 CAPLUS  
DN 76:33675  
TI  $\sigma$ - $\pi$  Conjugation of carbon-metal bonds. Dehydrometalation of  
alkylmetal compounds  
AU Jerkunica, Josko M.; Traylor, T. G.  
CS Revelle Coll., Univ. California, La Jolla, CA, USA  
SO Journal of the American Chemical Society (1971), 93(23), 6278-9  
CODEN: JACSAT; ISSN: 0002-7863  
DT Journal

LA English  
AB Ph<sub>3</sub>CBF<sub>4</sub> was treated with Me<sub>2</sub>EtSn in CH<sub>2</sub>Cl<sub>2</sub>. The trityl cation spectrum disappeared almost immediately and Ph<sub>3</sub>CH, CH:CH<sub>2</sub>, and Me<sub>3</sub>SnBF<sub>4</sub> were produced in nearly quant. yields. Similar reactions occurred with Bu<sub>2</sub>Hg, PhCH<sub>2</sub>CH<sub>2</sub>PbPh<sub>3</sub>, (PhCH<sub>2</sub>CMeH)Hg and PhCMeHSnMe<sub>3</sub>. However, PhCH<sub>2</sub>SnMe<sub>3</sub>, Me<sub>4</sub>Sn, (PhCMe<sub>2</sub>CH<sub>2</sub>)Hg and bis(1-apocamphyl)mercury did not react, illustrating the importance of the presence and proper geometry of the  $\beta$ H. A large variation in rate with the nature of the metal was in keeping with predictions based on  $\sigma$ - $\pi$  conjugation effects.

L6 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1959:88875 CAPLUS  
DN 53:88875  
OREF 53:15955b-f  
TI Unsymmetrical dialkylphosphinic acids  
AU Crofts, P. C.; Fox, I. S.  
CS Manchester Coll. Sci. Technol.  
SO Journal of the Chemical Society (1958) 2995-7  
CODEN: JCSOA9; ISSN: 0368-1769  
DT Journal  
LA Unavailable  
OS CASREACT 53:88875  
AB Four unsym. RR'PO<sub>2</sub>H, where R and R' are combinations of Me, Et, iso-Pr, and tert-Bu groups, were made by reaction of RMgX with a blocked or sterically hindered R'POCl<sub>2</sub>. EtPOCl<sub>2</sub> (I) was made by NaI isomerization of (EtO)<sub>3</sub>P, hydrolysis using refluxing aqueous HCl, and treatment of the EtPO<sub>3</sub>H<sub>2</sub> with SOCl<sub>2</sub> at reflux for 3 h. Adding 90 mL. of a solution of 0.2 mol Me<sub>2</sub>NH in 30-40° petr. ether over 20 min. to a stirred solution of 14.7 g. I in 200 mL. 30-40° petr. ether, filtering off Me<sub>2</sub>NH.HCl, and distilling the filtrate gave 10.5 g Et(Me<sub>2</sub>N)POCl (II), b<sub>10</sub> 102°. Adding 24.2 g. II in 100 mL. Et<sub>2</sub>O to MeMgBr (from 4.8 g. Mg) in 70 mL. Et<sub>2</sub>O over 2 h., refluxing 4 h., acidifying with 100 mL. concentrated HCl and 100 mL. H<sub>2</sub>O, distilling the ether, evaporating the aqueous solution, refluxing the residue in 100 mL. concentrated HCl overnight, evaporating, drying in vacuo over KOH pellets, passing an aqueous solution through a cation-exchange column, and concentrating effluent in vacuo gave a yellow oil which on distilling gave 14.6 g. crude EtMePO<sub>2</sub>H; careful refractionation gave 2.5 g., b<sub>11</sub> 170-2°, m. 7-8°, n<sub>20</sub>D 1.4514. Similarly 21.8 g. II with iso-PrMgCl (III) gave 6.0 g. Et(iso-Pr)PO<sub>2</sub>H, b<sub>0</sub> 0.017 89.5°, n<sub>20</sub>D 1.4567. Iso-PrPOCl<sub>2</sub> (16.0 g.) gave 13.2 g. iso-Pr-(Me<sub>2</sub>N)POCl, b<sub>12</sub> 104°, n<sub>25</sub>D 1.4628, 17.0 g. of which with Me<sub>2</sub>MgCl similarly gave 7.0 g. Me(iso-Pr)PO<sub>2</sub>H, b<sub>0</sub> 0.05 96-8°, n<sub>24</sub>D 1.4502. tert-BuPOCl<sub>2</sub> (IV) was sufficiently hindered to react selectively with III. Adding 17.0 g. IV in 100 mL. Et<sub>2</sub>O over 30 min. to III (from 10.0 g. iso-PrCl) in 150 mL. Et<sub>2</sub>O gave 2.7 g. crude acid, which on 5 recrystns. gave 0.8 g. tert-Bu(iso-Pr)PO<sub>2</sub>H, m. 82-4° (petr. ether).

=> s 15 and salts  
597843 SALTS  
L7 2 L5 AND SALTS

=> d 1-2 bib abs

L7 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1998:352139 CAPLUS  
DN 129:95608  
TI Preparation of 2-amino-1,3-propanediols and their use as immunosuppressants  
IN Shimazaki, Norihiko; Kayagiri, Hiroshi; Fukami, Naoki; Watanabe, Shinya; Yoshimura, Seiji; Abe, Yoshito; Mizutani, Takeshi

PA Fujisawa Pharmaceutical Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 63 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT. 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	JP 10147587	A2	19980602	JP 1997-315534	19971117 <--	
PRAI	AU 1996-3716	A	19961119			
	AU 1997-6948	A	19970523			
OS	MARPAT 129:95608					
AB	R2R3R4SiAEGJLC(NHR1) (CH <sub>2</sub> OH) <sub>2</sub> [R1 = H, acyl; R2 = H, lower alkyl, aryl; R3 = H, alkyl; R2R3 may form linear or branched lower alkylene; R4 = H, (halo)alkyl, alkenyl, (un)substituted aryl, heterocyclyl, etc.; A = alkylene; E = bond, O, imino; G = bond, arylene; J = bond, O; L = bond, lower alkene] and their medically acceptable salts are prepared. The compds. are useful for treatment of autoimmune disease, psoriasis, rejection, etc. Hydrolysis of 2-acetamido-2-[2-[4-[4-(dimethylphenylsilyl)butoxy]phenyl]ethyl]-1,3-propanediol and subsequent HCl salt formation gave HCl salt of the corresponding amine derivative, which showed strong immunosuppressive activity.					

L7 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1958:10901 CAPLUS  
DN 52:10901  
OREF 52:1917f-i,1918a  
TI The addition of trichlorosilane to 1-pentene with peroxide initiators  
AU Speier, John L.; Webster, James A.  
CS Mellon Inst. Ind. Research, Pittsburgh, PA  
SO Journal of Organic Chemistry (1956), 21, 1044-6  
CODEN: JOCEAH; ISSN: 0022-3263  
DT Journal  
LA Unavailable  
AB cf. C.A. 50, 14606f. A continuation study has been made of the addition of Cl<sub>3</sub>SiH (I) to 1-pentene (II) in the presence of peroxide initiators in which certain factors influencing the addition have been noted. A series of expts. were carried out in which I, II, and tert-Bu perbenzoate were mixed and sealed into small Claisen flasks, after a period of heating the flasks opened, and contents distilled. To these flasks were also added miscellaneous components thought likely to have an effect on the yields. Silicone grease, H<sub>2</sub>O, alc., Ni, Pb, Zn, air, N, or CO<sub>2</sub> had little or no effect. Fe and its salts were outstanding in preventing the formation of adduct. Sn was a promoter at temps. lower than those normally effective. Sn and its salts showed no catalytic activity alone, however, but presumably through some action on the peroxide acted as an effective promoter. Sn mixed with SnCl<sub>4</sub> caused the addition to become violent even at room temperature. Various Sn samples showed increasing activity with increasing amts. of impurities. Expts. using various initiators showed differences. Bz<sub>2</sub>O<sub>2</sub> was very active and gave high peroxide efficiencies, but in certain mixts. tended to react so rapidly as to make control difficult. Other initiators employed were N,N'-azobisisobutyronitrile, tert-Bu peracetate, di-tert-Bu peroxide, Me Am ketone peroxide, and tert-Bu perbenzoate. Pentyltrichlorosilane (III), b<sub>742</sub> 171.0°, n<sub>25D</sub> 1.4379, d<sub>25</sub> 1.128, was obtained from all expts. Methylation of III with excess MeMgBr in Et<sub>2</sub>O gave 80% pentytrimethylsilane (IV), b<sub>743</sub> 139.3°, n<sub>25D</sub> 1.4069, d<sub>25</sub> 0.7271. IV was also prepared by adding a mixture of C<sub>5</sub>H<sub>11</sub>Cl and Me<sub>3</sub>SiCl to molten Na in refluxing PhMe. Under the same conditions 2-pentene yielded a pentyltrichlorosilane, b. 165-7°, n<sub>25D</sub> 1.4455, d<sub>25</sub> 1.145, quite different from IV.

=> s 15 and polymerization  
336010 POLYMERIZATION

=> d 1-18 bib abs

L8 ANSWER 1 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2001:176652 CAPLUS  
DN 134:366627  
TI Insulated molecular wires: dendritic encapsulation of poly(triacetylene) oligomers, attempted dendritic stabilization of novel poly(pentaacetylene) oligomers, and an organometallic approach to dendritic rods  
AU Schenning, Albertus P. H. J.; Arndt, Jan-Dirk; Ito, Masato; Stoddart, Alison; Schreiber, Martin; Siemsen, Peter; Martin, Rainer E.; Boudon, Corinne; Gisselbrecht, Jean-Paul; Gross, Maurice; Gramlich, Volker; Diederich, Francois  
CS Laboratorium fur Organische Chemie, ETH-Zentrum, Zurich, CH-8092, Switz.  
SO Helvetica Chimica Acta (2001), 84(2), 296-334  
CODEN: HCACAV; ISSN: 0018-019X  
PB Verlag Helvetica Chimica Acta  
DT Journal  
LA English  
OS CASREACT 134:366627  
AB Multinanometer-long end-capped poly(triacetylene) (PTA) and poly(pentaacetylene) (PPA) oligomers with dendritic side chains were synthesized as insulated mol. wires. PTA oligomers with laterally appended Frechet-type dendrons of first to third generation were prepared by attaching the dendrons to an (E)-enediyne by a Mitsunobu reaction and subsequent Glaser-Hay oligomerization under end-capping conditions. Whereas first-generation oligomers up to the pentamer were isolated, for reasons of steric overcrowding, only oligomers up to the trimer were formed at the second-generation level, and only the end-capped monomer and dimer were isolated at the third-generation level. By repetitive sequences of hydrosilylation (with the Karstedt catalyst), followed by allylation or vinylation, a series of carbosilane dendrons were also prepared. Attachment of the second-generation wedge to (E)-enediyne, followed by deprotection and subsequent end-capping Hay oligomerization, provided PTA oligomers with lateral carbosilane dendrons. UV/VIS Studies demonstrated that the insulating dendritic layers did not alter the electronic characteristics of the PTA backbone, even at the higher-generation levels. Despite distortion from planarity due to the bulky dendritic wedges, no loss of  $\pi$ -electron conjugation along the PTA backbone was detected. A surprising (E) $\rightarrow$ (Z) isomerization of the diethynylethene (DEE) core in the third generation derivative was observed, possibly photosensitized by the bulky Frechet-type dendritic wedge. Electrochem. investigations by steady-state voltammetry and cyclic voltammetry showed that the first reduction potential of the PTA oligomer with Frechet-type dendrons is shifted to more neg. values as the dendritic coverage increases. The first oligomers with a poly(pentaacetylene) backbone were obtained by oxidative Hay oligomerization under end-capping conditions. The synthesis of dendritic PPA oligomers by oxidative coupling of (E)-enetetrayne under end-capping conditions provided oligomers, which were formed as mixts. of stereoisomers due to unexpected thermal (E) $\rightarrow$ (Z) isomerization. In another novel approach towards dendritic encapsulation of mol. wires with a Pt-bridged tetraethynylethene (TEE) oligomeric backbone, the trans-dichloroplatinum(II) complex with dendritic phosphane ligands was coupled under Hagihara conditions to mono-deprotected under formation of the extended monomer. Again, an unexpected thermal (E) $\rightarrow$ (Z) isomerization, possibly induced by steric strain between TEE moieties and dendritic phosphane ligands in the unstable complex, led to isomeric mixture only.

RE.CNT 97 THERE ARE 97 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 2 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2000:437042 CAPLUS

DN 133:177577  
TI Synthesis of layered dendritic carbosilanes  
AU Kim, C.; Choi, S. K.; Kim, B.  
CS Department of Chemistry, Dong-A University, Pusan, 604-714, S. Korea  
SO Polyhedron (2000), 19(9), 1031-1036  
CODEN: PLYHDE; ISSN: 0277-5387  
PB Elsevier Science Ltd.  
DT Journal  
LA English  
AB Layered dendritic carbosilanes containing triple bonds on the peripheral layer, double bonds in the (n-1)th inner shell, and single bonds in the (n-2)th inner shell were prepared. The synthetic pathways used iterative hydrosilation, alkenylation, and alkynylation. The fourth generation G4-E96PA is composed of two generations of propylene layers (G1 and G2) and one ethenyl layer in the inner shell (G3), and 96 ethynyl groups on the periphery (G4). The dendrimers are characterized by NMR, MALDI-TOF mass spectrometry, UV, IR, SEC and elemental anal.

RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 3 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2000:306503 CAPLUS  
DN 133:89822  
TI Copper(I) Bromide/N-(n-Octyl)-2-pyridylmethanimine-Mediated Living-Radical Polymerization of Methyl Methacrylate Using Carbosilane Dendritic Initiators  
AU Hovestad, Neldes J.; van Koten, Gerard; Bon, Stefan A. F.; Haddleton, David M.  
CS Debye Institute Department of Metal-Mediated Synthesis, Utrecht University, Utrecht, 3584 CH, Neth.  
SO Macromolecules (2000), 33(11), 4048-4052  
CODEN: MAMOBX; ISSN: 0024-9297  
PB American Chemical Society  
DT Journal  
LA English  
AB The zeroth ( $\text{Si}\{(\text{CH}_2)_3\text{SiMe}_2(\text{C}_6\text{H}_4\text{CH}_2\text{OC(O)CMe}_2\text{Br}\})_4$ ), (2), and first ( $\text{Si}\{(\text{CH}_2)_3\text{Si}((\text{CH}_2)_3\text{SiMe}_2(\text{C}_6\text{H}_4\text{CH}_2\text{OC(O)CMe}_2\text{Br}))_3\}_4$ ), (3), generation of 2-bromo isobutyryl functionalized carbosilane dendrimers have been successfully applied as initiators for the copper(I) bromide/N-(n-octyl)-2-pyridylmethanimine-mediated living-radical polymerization of Me methacrylate. The overall rate of polymerization are comparable for the two dendritic initiators studied, 2 ( $3.4 + 10^{-5}$  mol L<sup>-1</sup> s<sup>-1</sup>) and 3 ( $4.8 + 10^{-5}$  mol L<sup>-1</sup> s<sup>-1</sup>) with the benzylic model compound  $\text{C}_6\text{H}_5\text{CH}_2\text{OC(O)CMe}_2\text{Br}$  (1) showing a lower rate of polymerization for both dendritic initiators, ( $7.3 + 10^{-5}$  mol L<sup>-1</sup> s<sup>-1</sup>) where [initiator sites] =  $1.87 + 10^{-2}$  mol L<sup>-1</sup>. We postulate that this is caused by initial intramol. termination. The mol. weight distribution is less than 1.3 after 3 h reaction time. Initiator 3, however, produces star-star coupling throughout the polymerization. When the dendritic periphery is partially functionalized (statistically two and six arms of the first generation dendrimer, resp., 4 and 5) the control of the mol. weight distribution was lost (PDI > 3) for 4 as a result of too low of a value for [initiator site], i.e.,  $3.12 + 10^{-3}$  mol L<sup>-1</sup>.

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 4 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2000:305017 CAPLUS  
DN 133:105421  
TI Modular Construction of Dendritic Carbosilanes. Organization of Dendrimer Connectivity around Bifunctional Precursors That Are Adapted for Sequential Convergent and Divergent Propagative Steps  
AU Casado, Miguel Angel; Stobart, Stephen R.  
CS Department of Chemistry, University of Victoria, BC, V8W 2Y2, Can.

SO Organic Letters (2000), 2(11), 1549-1552  
CODEN: ORLEF7; ISSN: 1523-7060  
PB American Chemical Society  
DT Journal  
LA English  
AB Regiospecific hydrosilylation of 1-bromo-4-(prop-2-enyl)benzene offers an efficient route to mol. building block precursors that can accommodate sequential divergent and convergent steps for dendritic extension, establishing a modular methodol. for assembly and organization of connectivity used for synthesis of modified carbosilane dendrimers including Si(CH2CH2CH2SiMe2CH2CH2CH2-p-C6H4-p-C6H4CH2CH2CH2SiMe)[CH2CH2CH2SiMe][CH2CH2CH2SiMe(CH2CH=CH2)2]2]2]4.  
RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 5 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1999:558865 CAPLUS  
DN 132:152194  
TI Atom transfer polymerization of methyl methacrylate initiated by carbosilane dendritic species  
AU Hovestad, Neldes J.; Jastrzebski, Johann T. B. H.; Van Koten, Gerard; Bon, Stefan A. F.; Waterson, Carl; Haddleton, David M.  
CS Debye Institute, Department of Metal-Mediated Synthesis, Utrecht University, Utrecht, 3584 CH, Neth.  
SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1999), 40(2), 393-394  
CODEN: ACPPAY; ISSN: 0032-3934  
PB American Chemical Society, Division of Polymer Chemistry  
DT Journal  
LA English  
AB Zero- and first-generation carbosilane dendrimers were functionalized with a tertiary bromide species to be used as initiating compds. in atom transfer polymerization. A kinetic study showed that atom transfer polymerization of Me methacrylate mediated by copper bromide and Schiff's base ligands was possible and produced star polymers with narrow mol. weight distributions.  
RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 6 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1999:334360 CAPLUS  
DN 131:116617  
TI Synthesis of carbosilane liquid-crystalline dendrimers of the first-fifth generations containing terminal cyanobiphenyl groups  
AU Ponomarenko, S. A.; Rebrov, E. A.; Boiko, N. I.; Muzaferov, A. M.; Shibaev, V. P.  
CS Department of Chemistry, Moscow State University, Moscow, 119899, Russia  
SO Vysokomolekulyarnye Soedineniya, Seriya A i Seriya B (1998), 40(8), 1253-1265  
CODEN: VSSBEE; ISSN: 1023-3091  
PB MAIK Nauka  
DT Journal  
LA Russian  
AB Carbosilane LC dendrimers of the first-fifth generations containing 8, 16, 32, 64, and 128 cyanobiphenyl terminal mesogenic groups, resp., were synthesized according to the divergent scheme. The synthesis of both the starting carbosilane dendrimers with the terminal allylic groups and the resulting LC compounds is described. The synthetic method is based on a Grignard reaction-hydrosilylation cycle, and silane bearing cyanobiphenyl groups linked via a spacer of 1 I methylene groups is added at the last stage of synthesis. The structure and the individuality of all the new dendrimers were established by NMR spectroscopy and gel-permeation chromatog. All the resulting dendrimers display LC mesophase in a wide temperature range.

L8 ANSWER 7 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1998:699732 CAPLUS  
DN 130:38734  
TI Termination of carbosilane dendrimers based on hexaallylethylenedisilane as core molecule  
AU Kim, Chungkyun; Jeong, Younsook  
CS Department of Chemistry, Dong-A University, Pusan, 604-714, S. Korea  
SO Main Group Metal Chemistry (1998), 21(10), 593-599  
CODEN: MGMCE8; ISSN: 0792-1241  
PB Freund Publishing House Ltd.  
DT Journal  
LA English  
AB Dendritic carbosilanes based on hexaallylethylenedisilane ((CH<sub>2</sub>=CHCH<sub>2</sub>)<sub>3</sub>SiCH<sub>2</sub>)<sub>2</sub> as a core mol. and allyl-groups as growth generation were prepared. The reaction path of the repetitive hydrosilation-alkenylation cycles is revealed by NMR spectroscopy. Each of the 2 steps in the hydrosilation-alkenylation process provided quant. yields of pure dendrimers. The termination of the dichloromethylsilyl-group contained third generation (G3P with Cl<sub>2</sub>MeSi-groups) and chlorodimethylsilyl-group contained fourth generation (G4P with ClMe<sub>2</sub>Si-groups) with allylmagnesium bromide, p-bromophenol, p-phenylphenol, LiAlH<sub>4</sub>, and Li phenylacetylide were performed. All of the terminated dendrimers can be obtained as pure substances after simple chromatog. purification. They are characterized by spectroscopic analyses (NMR, MALDI mass, UV and IR) as well as elemental analyses.

RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 8 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1997:777187 CAPLUS  
DN 128:75714  
TI Synthesis of polylithium derivatives of carbosilane dendrimers  
AU Vasilenko, N. G.; Getmanova, E. V.; Myakushev, V. D.; Rebrov, E. A.; Moller, M.; Muzafarov, A. M.  
CS Institute of Synthetic Polymeric Materials, Russian Academy of Sciences, Moscow, 117393, Russia  
SO Vysokomolekulyarnye Soedineniya, Seriya A i Seriya B (1997), 39(9), 1449-1455  
CODEN: VSSBEE; ISSN: 1023-3091  
PB MAIK Nauka  
DT Journal  
LA Russian  
AB Methylbidecylsilyl-derivs. of polyallylcarbosilane dendrimers of the second and third generations bearing unsatd. groups in the inner sphere were synthesized. Organolithium compds. containing 8 and 16 lithium atoms were synthesized on their basis. The arrangement of lithium atoms in the inner sphere of a dendrimer prevents their intermol. aggregation. The synthesized compds. are new polyfunctional initiators of anionic polymerization, which show good solubility in organic solvents and which have reaction centers of equal activity. Using polymerization of hexamethylcyclotrisiloxane as an example, it was shown that these initiators are highly efficient catalysts in the synthesis of star-shaped polymers with the active functional groups at the ends of the arms.

L8 ANSWER 9 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1997:483983 CAPLUS  
DN 127:176800  
TI Dendrimers Containing Organometallic Moieties Electronically Communicated  
AU Cuadrado, Isabel; Casado, Carmen M.; Alonso, Beatriz; Moran, Moises; Losada, Jose; Belsky, Vitaly  
CS Departamento de Quimica Inorganica, Universidad Autonoma de Madrid,

SO Madrid, 28049-, Spain  
Journal of the American Chemical Society (1997), 119(32),  
7613-7614  
CODEN: JACSAT; ISSN: 0002-7863  
PB American Chemical Society  
DT Journal  
LA English  
AB First and second generations of dendrimers and dendrons possessing ferrocenyl units electronically communicated have been constructed. The synthesis has been achieved following a convergent approach, starting from a vinyl-functionalized silicon-bridged biferroocene as a dendron, which has been characterized by X-ray crystallog. The novel dendritic mols. containing up to sixteen ferrocenyl moieties at the surface have been structurally characterized by 1H, and 13C NMR, IR spectroscopy, elemental anal., and mass spectrometry. Solution electrochem. studies showed significant electronic interactions between peripheral ferrocenyl moieties which are linked by a bridging silicon atom. Electrodes modified with electroactive films of dendrimers carrying interacting ferrocenyl units, have been prepared

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

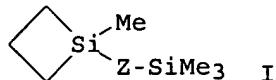
L8 ANSWER 10 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1997:184981 CAPLUS  
DN 126:238723  
TI Chemistry of silane arborols. VII. Preparation of carbosilane dendrimers based on siloxane tetramer: silane arborols  
AU Kim, Chungkyun; An, Kyungmi  
CS Department Chemistry, Dong-A University, Pusan, 604-714, S. Korea  
SO Bulletin of the Korean Chemical Society (1997), 18(2), 164-170  
CODEN: BKCSDE; ISSN: 0253-2964  
PB Korean Chemical Society  
DT Journal  
LA English  
AB Via hydrosilylation-allylation approach using hydrosilanes (HSiMeCl<sub>2</sub> and HSiCl<sub>3</sub>) and allylmagnesium bromide with siloxane tetramer (MeCH<sub>2</sub>=CHSiO)<sub>4</sub> as core mol., noble carbosilane dendrimers with 12, 24, 48 and 96 allylic end groups were prepared. The reaction path of the repetitive allylation and hydrosilylation was monitored by means of NMR spectroscopic measurements. Every step for the formation of dendrimer provided almost quant. yields as pure dendrimers. Based on the observation of UV spectroscopic measurements of Ga (n-1-4) mols. containing allylic end groups, the maximal molal absorption coeffs. ( $\epsilon_{max}$ ) at  $\lambda_{max}$  and the number of double bonds proved an exponentially increased correlation.

RE.CNT 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 11 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1994:558309 CAPLUS  
DN 121:158309  
TI Fluorescently labeled polyallylcarbosilane dendrimers  
AU Krasovskii, V. G.; Sadovskii, N. A.; Gorbatshevich, O. B.; Muzaferov, A. M.; Myakushev, V. D.; Il'ina, M. N.; Dubovik, I. I.; Strelkova, T. V.; Papkov, V. S.  
CS Inst. Synthetic Polymeric Materials, Moscow, 117393, Russia  
SO Vysokomolekulyarnye Soedineniya, Seriya A i Seriya B (1994),  
36(4), 714-20  
CODEN: VSSBEE; ISSN: 1023-3091  
DT Journal  
LA Russian  
AB Polyallylcarbosilane dendrimers labeled by a fluorescent probe (pyrenyl) on the central silicon atom were first prepared. The compds. obtained were studied by NMR and UV spectroscopies, gel permeation chromatog. (GPC), and differential scanning calorimetry (DSC) and their fluorescence spectra

were also recorded. The possibility to study the intramol. structure of dendritic macromols. is demonstrated.

L8 ANSWER 12 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1992:256191 CAPLUS  
DN 116:256191  
TI Synthesis of polysiltrimethylenes with trimethylsilyl groups in the branch of main chain  
AU Finkel'shtein, E. Sh.; Ushakov, N. V.; Pritula, N. A.; Andreev, E. A.; Plate, N. A.  
CS A. V. Topchiev Inst. Pet. Chem. Synth., Moscow, 117912, USSR  
SO Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya (1992), (1), 223-5  
CODEN: IASKA6; ISSN: 0002-3353  
DT Journal  
LA Russian  
GI



AB Thermally initiated or Pd catalyst-initiated polymerization of 1-silacyclobutanes  
(I) [Z is CH<sub>2</sub>, (CH<sub>2</sub>)<sub>3</sub>, or p-C<sub>6</sub>H<sub>4</sub>] gave soluble high-mol.-weight polycarbosilanes with Me<sub>3</sub>Si groups attached to the main chain via various bridges.

L8 ANSWER 13 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1980:568679 CAPLUS  
DN 93:168679  
TI Role of the stability of lithium poly(vinyltrimethylsilane) in the anionic polymerization of vinyltrimethylsilane  
AU Bryantseva, I. S.; Khotimskii, V. S.; Durgar'yan, S. G.; Nametkin, N. S.  
CS Inst. Neftekhim. Sint. im. Topchieva, Moscow, USSR  
SO Doklady Akademii Nauk SSSR (1980), 251(4), 878-82 [Chem.]  
CODEN: DANKAS; ISSN: 0002-3264  
DT Journal  
LA Russian  
AB An investigation of model reactions indicated that polymerization of CH<sub>2</sub>:CHSiMe<sub>3</sub>  
(I) [754-05-2] initiated by sec-BuLi [598-30-1] is accompanied by spontaneous cleavage of the C-Li bonds in the growing macromols., producing LiH. At >100° LiH initiates the polymerization of I, but at <100° the elimination of LiH reduces the concentration of living chains. The model reactions included decomposition of Li poly(trimethylvinylsilane) [75026-46-9] (mol. weight 6800) in hexane at 25-120° to LiH and the corresponding olefin, initiation of the polymerization of I by LiH, and anal. of products formed in the reaction of sec-BuLi with I under selected conditions.

L8 ANSWER 14 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1979:204178 CAPLUS  
DN 90:204178  
TI Oligomerization of vinyl- and ethynyltrimethylsilanes  
AU Yur'ev, V. P.; Gailiunas, G.; Yusupova, F. G.; Nuritdinova, G. V.; Monakhova, E. S.; Tolstikov, G. A.  
CS Inst. Chem., Ufa, USSR

SO Journal of Organometallic Chemistry (1979), 169(1), 19-24  
CODEN: JORCAI; ISSN: 0022-328X  
DT Journal  
LA English  
OS CASREACT 90:204178  
AB Oligomerization of vinyl- and ethynyltrimethylsilanes in the presence of homogeneous Ni, Co and Ti catalytic systems were studied. Vinyltrimethylsilane forms linear dimeric products, 1,4-bis(trimethylsilyl)butenes. Using the Ti catalytic system, in addition to butenylsilane, a branched dimeric product, 1,3-bis(trimethylsilyl)-3-methylprop-1-ene, and a linear trimer 1,3,6-tris(trimethylsilyl)hex-3-ene are formed. Ethynyltrimethylsilane, in the presence of the Ni catalytic system, is converted into a linear dimer, 1,4-bis(trimethylsilyl)but-3-en-1-yne, and linear trimer, 1,4,6-tris(trimethylsilyl)hex-3,5-dien-1-yne.

L8 ANSWER 15 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1970:435806 CAPLUS  
DN 73:35806  
TI Synthesis of polysilylureas and polysilylureilenes  
AU Gol'din, G. S.; Tsiomo, S. N.; Shchekina, T. V.; Kozyukov, V. P.  
CS USSR  
SO Vysokomolekulyarnye Soedineniya, Seriya B: Kratkie Soobshcheniya (1970), 12(4), 307-9  
CODEN: VYSBAI; ISSN: 0507-5483  
DT Journal  
LA Russian  
GI For diagram(s), see printed CA Issue.  
AB Oligomeric poly(silylureas) [I, R = O, CH<sub>2</sub>, (CH<sub>2</sub>)<sub>2</sub>, or (CH<sub>2</sub>)<sub>3</sub>] were prepared by a reaction of bis[( $\gamma$ -isocyanatopropyl)dimethylsilyl]-alkanes (II) or 1,3-bis( $\gamma$ -isocyanatopropyl)-1,1,3,3-tetramethylsiloxane (III) with MeNH(CH<sub>2</sub>)<sub>2</sub>NHMe. Reaction of N<sub>2</sub>H<sub>4</sub> or PhNHNH<sub>2</sub> with II or III gave poly(silylurelenes) [IV, R = O or (CH<sub>2</sub>)<sub>3</sub>], almost insol. in organic solvents. The structure of the polymers was determined by ir spectroscopy and elemental anal.

L8 ANSWER 16 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1965:446342 CAPLUS  
DN 63:46342  
OREF 63:8393g-h,8394a  
TI Platinum-catalyzed reactions of silacyclobutanes and 1,3-disilacyclobutanes  
AU Weyenberg, Donald R.; Nelson, Lee E.  
CS Dow Corning Corp., Midland, MI  
SO Journal of Organic Chemistry (1965), 30(8), 2618-21  
CODEN: JOCEAH; ISSN: 0022-3263  
DT Journal  
LA English  
AB Platinum has been found to be a catalyst for the ring-opening polymerization of silacyclobutanes (I) and 1,1,3,3-tetramethyl-1,3-disilacyclobutane (II). The structures of the polymers were shown to be [R<sub>2</sub>Si(CH<sub>2</sub>)<sub>3</sub>]<sub>x</sub> and [Me<sub>2</sub>SiCH<sub>2</sub>]<sub>x</sub> by comparison of their <sup>1</sup>H N.M.R. and infrared spectra to model structures. Platinum also catalyzed the interaction of silicon hydrides (R'3SiH) with I and II to give telomeric structures, R'3Si[(CH<sub>2</sub>)<sub>2</sub>SiR<sub>2</sub>]<sub>x</sub>H and R'3Si[CH<sub>2</sub>SiMe<sub>2</sub>]<sub>2</sub>xH. Studies with phenyldimethylsilane-d show that this reaction involves exchange of the silicon-hydrogen bond of the hydride and the ring silicon-carbon bond of I and is thus the first example of a platinum-catalyzed exchange of alkyl and hydrogen on silicon.

L8 ANSWER 17 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1964:440520 CAPLUS  
DN 61:40520  
OREF 61:7039e-f  
TI Telomerization of silacyclobutanes

AU Nametkin, N. S.; Vdovin, V. M.; Grinberg, P. L.  
CS Inst. Petrochem. Synth., Moscow  
SO Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya (1964), (6),  
1133-4  
CODEN: IASKA6; ISSN: 0002-3353  
DT Journal  
LA Unavailable  
AB Refluxing R<sub>3</sub>SiH with 1,1-dialkyl-1-silacyclobutanes with or without added Pt catalyst several hrs. resulted in formation of R<sub>3</sub>Si(CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>SiR<sub>2</sub>)<sub>n</sub>H. With R = Et and R' = Me, the following telomers were isolated (n shown): 1, b<sub>3</sub> 63-5°, n<sub>20</sub>D 1.4452, d<sub>20</sub> 0.8033; 2, b<sub>1</sub> 116-18°, 1.4535, 0.8236. Higher telomers were also formed. The reaction was also applicable to disilacyclobutanes.

L8 ANSWER 18 OF 18 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1958:10900 CAPLUS  
DN 52:10900  
OREF 52:1917e-f  
TI The mode of peroxide-catalyzed polymerization of vinyl-triethoxysilane  
AU Mixer, R. Y.; Bailey, D. L.  
CS Linde Air Products. Co., Tonawanda, NY  
SO Journal of Polymer Science (1955), 18, 573-82  
CODEN: JPSCAU; ISSN: 0022-3832  
DT Journal  
LA Unavailable  
AB It has been qualitatively demonstrated that vinyltriethoxysilane, b<sub>30</sub> 70°, n<sub>25</sub>D 1.3966, d<sub>25</sub> 0.9036, MRD 50.66, is polymerized by a free radical process to clear, colorless viscous liquid polymer of low mol. weight. The low mol. weight is the result of chain transfer with polymer and monomer. This chain transfer involves the abstraction of the α-H of an ethoxysilyl group of either the polymer or the monomer. The ratio of chain transfer with polymer to that with monomer for high conversion is at least 4.5.